PROJECTED TO SUCCEED:
WHAT HIGH SCHOOL GRADUATES TAKE WITH THEM FROM SENIOR PROJECT

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Abstract

This qualitative study explored the experiences of 27 graduates of a suburban high school in New England after their successful completion of the school’s senior project, a project-based learning graduation requirement. Its purpose was to identify and describe what these recent graduates from the Classes of 2013-2017 perceived they gained from the project and how these gains may be or were of value to them in their lives after high school. The researcher also sought to understand how the authentic and self-directed elements of the project contributed to participants’ deeper learning, and how the project might be redesigned to better serve future students’ experience with the project and the learning they take with them from it. Authentic learning theory (Harrington & Oliver, 2000) and self-directed learning theory (Gibbons, 2002) as they contribute to the principles of deeper learning (Martinez & McGrath, 2014; National Research Council, 2014) guided the study. Three major findings emerged: the senior project contributes to students’ positive personal growth and future success through the deeper learning skills it fosters and engages; the intrinsic value of the project derives from the power and agency it affords students, two critical elements that should be further encouraged, supported and expanded as the project moves forward; and more opportunities for self-directed, authentic learning like senior project should be made available to students earlier in their academic careers so they can become more proficient in the deeper learning skills necessary to succeed in life after high school. The researcher provides recommendations for local project re-design and explores implications for national high school redesign and K-12 curriculum reform.

Keywords: senior project, project-based learning, authentic learning, self-directed learning, deeper learning, high school redesign, curriculum reform.
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Chapter I: Introduction

The mission statement at the beginning of the Bayside High School Senior Project Student Handbook reads:

The Senior Project challenges students to demonstrate and display their mastery of many of the skills they acquired during their years in the Bayside Public Schools. One of the goals of the Senior Project is to allow students to take control of and have a powerful voice in their own education and development both as learners and individuals. Student choice and personal interest are valued and recognized during each phase of the Senior Project. It is an opportunity for students to demonstrate what they know and are able to do and to showcase their achievement. (Bayside High School, 2017, p. 2)

For 14 years, seniors at this New England high school have completed senior projects in order to graduate. Students choose a topic in which they are interested and develop a project that involves research and a personal interview, a paper that addresses their findings, a fieldwork experience with a mentor, a portfolio that includes their reflections on their learning, and a formal presentation to faculty and community judges with a question and answer period to follow. Ideally, the project offers students an opportunity to engage in authentic, self-directed learning, providing them with a deeper learning experience that should benefit them both academically and personally in their post-secondary endeavors. The extent to which this is true for recent graduates from the researcher’s high school, referred to as Bayside High School throughout, is the focus of this study.

The Research Topic

New England states like Rhode Island, Maine, and Vermont have implemented proficiency-based graduation requirements (PBGR) which require students to demonstrate their
academic skills and apply their knowledge through performance-based assessments (Maine Department of Education, 2016; Rhode Island Department of Education, 2016; Vermont Agency of Education, 2016). In Rhode Island, school districts must select two PBGR from a menu of three options as part of their Diploma System: exhibitions, portfolios, or comprehensive course assessments. The rationale behind these performance-based assessments is to “allow students to demonstrate, at a more comprehensive and increased cognitive level, the application of content learned through coursework” (Rhode Island Department of Education, 2016). The assessments are meant to be authentic, real world experiences calling upon interdisciplinary skills like communication, problem-solving, creativity, and collaboration (Cornell, 2014). All students must successfully complete these assessments in order to graduate, thus preparing them “to successfully enter and complete a rigorous post-secondary academic or technical program, join the military, and/or obtain a job that leads to a rewarding and viable career” (Rhode Island Department of Education, 2016).

Rhode Island schools that choose exhibitions as one of their PBGR generally follow a senior project model (Snider, 2016). Senior projects, as they are most commonly practiced, were first developed by educators at South Medford High School in Medford, Oregon, in the late 1980s (Summers, 1989; Cowan & Carter, 1994; Egelson, Harman & Bond, 2002). It was registered in 1987 by Far West EDGE, Inc., which promoted the project nationwide until 2004, and is now licensed by the nonprofit Partnership for Dynamic Learning, Inc. (Senior Project Center, 2014). As such, a senior project is primarily student-driven and generally consists of five components: a proposal, paper, fieldwork, portfolio, and presentation (Lorenz, 1999). The proposal, also referred to as a letter of intent, is the student’s initial framing of his or her project; it includes topic selection, the scope and nature of the proposed project, and the identity and
credentials of his or her mentor. Parental permission and mentor agreement is required, and some topic choices may be restricted to students due to legality, potential nepotism, cost, etc. (Winters, 2000; Bayside High School, 2017). The paper can take many forms—informational, argumentative, reflective, etc.—depending on the goals of each individual school district, but it is supported by research and falls somewhere between 6-15 pages including both secondary and primary sources—i.e., personal interviews, fieldwork experience, etc. (Cowan & Carter, 1994; Egelson, Harman & Bond, 2002; New Hanover County Schools, 2011). The fieldwork portion of senior project involves an adult mentor who is selected by the student and experienced in the field the student wishes to explore. The student then completes a minimum of 15-30 hours or fieldwork under the supervision of his or her mentor resulting in a product or an experience that reflects a learning stretch for him or her (Cowan & Carter, 1994; New Hanover County Schools, 2011; Bayside High School, 2017; Medford School District, 2015). For Bayside students, this learning stretch means their project will serve to expand or build upon their skills and knowledge in a particular area of study. Students who have previous skills and knowledge in an area are told they “will have to explore this subject in a genuinely new and challenging manner, not just repeat what [they] already know or have already learned” (Bayside High School, 2017, p. 7). The portfolio, whether paper or electronic, is a record of the student’s senior project experience; it can include an introductory letter from the student, his or her reflections on various stages of learning, the paper, a time log verified by the mentor, and the mentor’s letter of recommendation. The final presentation, in most cases, is delivered to a panel of faculty and community judges and is between 8-15 minutes in length. The presentation requires each student to discuss the various stages of his or her project, communicate the learning and challenges he or she experienced throughout, and reflect on future goals and aspirations (Summers, 1989; Egelson,
Harman & Bond, 2002; New Hanover County Schools, 2011; Bayside High School, 2017; Medford School District, 2015)

**Problem of Practice**

Teachers and administrators at Bayside High School extol the virtues of senior project: how it challenges each student in a different way, how it provides them with an opportunity to pursue their own interests, and how it makes the senior year more meaningful and focused. Community members who serve as judges for student Senior Board presentations return year after year and praise the program and the students whose portfolios they review and then watch present. Parents and other community members of the project’s steering committee participate in overseeing a project they generally express to be strong and worthwhile. When introduced to the project, juniors are told it “builds a bridge between the skills [they] learn in the classroom and the real world” (Bayside High School, 2017, p. 2) and that the “element of choice is what really lends meaning to the Senior Project, and it is what makes it so unique” (p. 3). They are told to “dare to dream” and to choose a topic in which they are truly interested for that will make all the difference (p. 7).

Over the years, these claims have been supported, to some extent, by feedback from graduates returning to the school to visit when on holiday or summer breaks; however, this information is anecdotal, without any deliberate formal analysis, and not a representative sampling of each graduating class of seniors. No formal study of students’ experiences with and perceptions of the school’s senior project has ever been conducted to verify these beliefs about its value, especially with respect to its claims of authentic, self-directed learning. It is not known what, if anything, of value students take with them from their senior project experiences and if these benefits helped them successfully cross that “bridge” to their lives after high school.
At Bayside, the senior project was adopted and initiated in 1998 to address forthcoming state mandated PBGR and concerns regarding what graduating seniors know and are able to do after four years of high school. Further, it was meant to provide students with more choice and say in their education, more opportunities to apply what they have learned, as well as keep them more engaged throughout their senior year, especially during the second semester. In 2004, the project became a graduation requirement. Subsequently, the project evolved with respect to the Common Core State Standards (CCSS) and their emphasis on reading, informational and argumentative writing, and speaking and listening skills as “[preparation] for today’s entry-level careers, freshman-level college courses, and workforce training programs” (Common Core State Standards Initiative, 2016). Most recently, as the researcher’s school district embarks on an initiative to provide students with more opportunities for deeper learning (Marinez & McGrath, 2014), the senior project stands as the only significant project-based learning experience in which all students must participate and complete successfully. Deeper learning seeks to develop in students the ability to direct their own learning, set goals for themselves, monitor their own progress, and reflect on their own strengths and areas for improvement, ultimately, making them more adaptive than their peers who are not provided with similar opportunities to learn through self-direction in authentic ways (Schneider & Vander Ark, 2014). These goals echo the aims of the project itself; still, it is a project about which the district knows very little with respect to what this learning experience is really like for students and how it benefits them as individuals when they leave high school to face the challenges of college, career, and life itself.

Recent studies relate the effectiveness of providing students with opportunities to take control of, construct, guide, and assess their own learning (Merriam & Bierema, 2014;
Project-based learning initiatives, like senior project, for many years now have been viewed as an effective means to engage students in learning that improves their academic skills—i.e., reading, writing, researching, planning, and time management skills—and contributes to their stronger sense of self-efficacy and self-direction (Heimstra, 1999; Gibbons, 2002; Newell, 2003). Furthermore, studies on senior projects, in particular, reveal that teachers, administrators, and community members believe they can be an effective means of having students demonstrate college and career readiness skills (Skeldon, 2012; Nishimura, 2014) and that students feel the experience of completing such a project made their senior year more engaging, possibly contributing to their sense of self-efficacy with respect to their pursuits after high school (Duff, 2006; Pennacchia, 2010; Blanchard, 2012).

Although recent studies have explored the benefits of authentic, self-directed learning opportunities like senior project, few have focused primarily on recent high school graduates and their firsthand perceptions of the benefits that such opportunities provide them in their postsecondary pursuits (Wehrs, 2002; Pennacchia, 2010; Nishimura, 2014). This transference of skills is critical to determining the value and effectiveness of such project-based learning initiatives which result in deeper learning (Martinez & McGrath, 2014).

**Study Site**

The site for this study provides an opportunity to understand how an authentic, self-directed project-based learning experience is perceived by students who have successfully completed it. The senior project program at Bayside High School began in 1998, and the project became a graduation requirement in 2004. The school was the first public school in its state to implement the senior project model. Now, in its 20th year, the project—although it has evolved over time to some degree—essentially remains unchanged with respect to its basic requirements.
of each student: a letter of intent, at least 15 hours of fieldwork with a mentor on a topic of the student’s choice, a research paper exploring the topic further via scholarly research and a personal interview, a portfolio that records the student’s experience and reflections on his or her learning, and a final presentation before a panel of faculty and community judges.

**Statement of Significance**

By exploring the nature of the lasting benefits to students of participating in and successfully completing a senior project in which authentic, self-directed learning is stressed, researchers and educators will be better able to evaluate the effectiveness of such programs and how they can, if necessary, be improved to provide future students with more authentic and meaningful project-based learning opportunities throughout their secondary education.

**Intended Audiences**

The results and conclusions of this study will prove the most useful for the researcher’s own school community, primarily its administrators and faculty, but also its students and their parents who stand to benefit from any improvements to the project that may occur as a result. Also, as the first public high school in the state to implement a senior project and to make it a graduation requirement, Bayside High School has been held as a model for other schools locally and in the region. State and local officials have pointed to the school as an exemplar with respect to its implementation of state-mandated PBGR and providing authentic learning opportunities for its students. In this light, the results of this study will be relevant to those schools both in and outside the state who currently have a senior project in place or who are considering implementation as a means of addressing national, state or local learning standards.
Positionality Statement

As one of two founding coordinators of Bayside High School’s senior project, the researcher oversaw more than 1,500 students undertaking their projects between 1998 and 2004 as they worked towards its successful completion. As a result, the project is very much a part of the researcher’s legacy as a teacher leader at his school and was his first school wide leadership experience as a change agent. Although he is no longer directly involved in the project’s day-to-day administration or oversight, as English department chair he is a member of the project’s steering committee and previously has been a member of its advisory board—a committee that adjudicates special circumstances and student requests for waivers, etc. The researcher is also, currently, a senior project teacher as he teaches one or more senior English classes in which the research paper is embedded. In this role, the researcher serves as the primary guide, advisor, and assessor of a group of seniors as they navigate the project selection process, the research and writing of their paper, their fieldwork with their mentor, and the creation and delivery of their senior project portfolios and senior board presentations. Finally, the researcher is a white male with an advanced college degree who, given his role as a core department chair, is in a position of power at his school. He understands that these facts provide him with advantages that other researchers may not possess. Still, it is both as a change agent and an educational leader that the researcher looks to this study as an opportunity to better understand the project he was instrumental in developing and to improve it, if his findings indicate such opportunities, with respect to its true and lasting benefits to students.

Research Questions

Students who successfully complete a senior project have had the opportunity to engage in an authentic, self-directed learning experience and to experience deeper learning,
strengthening their cognitive, interpersonal and intrapersonal skill sets (William and Flora Hewlett Foundation, 2013). As school districts across the country continue to search for ways to challenge students in meaningful, real-world contexts and allow them to take control of their own learning, understanding the lasting impact and value one high school’s senior project has had on its students has the potential to ensure a more positive experience for students at this school in the future. Moreover, gaining insights into students’ perceptions of the value and significance of senior project with respect to their post-secondary pursuits will benefit other educators and school districts seeking to provide or improve such learning opportunities to students. Given this purpose, the research questions for this study are:

1. What do high school graduates perceive they have gained from their participation in the senior project and how do they perceive these gains as of value to them, while in school and in their lives after high school?

2. How did elements of the senior project in keeping with authentic and self-directed learning contribute to their engagement and learning in the project?

3. Given the desired outcomes of the project as put forth by the school, how do high school graduates believe senior project could be redesigned to have a greater impact on students’ experience and learning both during and after high school?

**Theoretical Framework**

Authentic learning theory and self-directed learning theory will be the two theoretical lenses through which the researcher will view the results of this study.

**Authentic learning theory.** Authentic learning theory asserts that students learn best when engaged in real-world, complex problem-solving that is meaningful to them (Herrington & Oliver, 2000). Authentic learning has three critical components—a student-centered classroom,
active learning, and real-world experiences (Thompson, 2009) — and it “cultivates . . . portable skills” in students (Lombardi, 2007, p. 3). Herrington, Oliver and Reeves (2002) determined that activities that engage students in authentic learning have distinct characteristics. Authentic learning is student-centered, real world, relevant, ill-defined, complex, research-based, collaborative, interdisciplinary, and product-oriented (p. 564). Various combinations of these characteristics and traits were noted and observed by researchers who studied effective authentic learning activities at various levels of education both in the classroom and online (Hill & Smith, 1998; DeCastro & Cho, 2005; Hill & Smith, 2005; Borthwick, Bennett, Lefoe & Huber, 2007; Lombardi, 2007; Hui & Koplin, 2011).

Researchers have found that students involved in authentic learning are motivated to persevere despite initial disorientation or frustration, as long as the exercise simulates what really counts—the social structure and culture that gives the discipline its meaning and relevance (Herrington, Oliver & Reeves, 2003). The learning experience encourages students to compare their personal interests with those of an individual working in a disciplinary field and asking themselves: “Can I see myself becoming a member of this culture? What would motivate me? What would concern me? How would I work with the people around me? How would I make a difference?” (Lombardi, 2007).

Authentic learning theory contributes to a deeper understanding of the benefits of project-based learning activities as they are student-centered, have real world relevance and require students to define the focus of complex tasks to be explored over a sustained period of time, using a variety of resources. These activities often require students to collaborate with a mentor or expert experienced in the field, and may call upon them to examine a task from different perspectives or apply it across different subject areas, leading beyond domain-specific outcomes.
and resulting in the creation of a polished product valuable in its own right rather than as preparation for something else (Herrington, Oliver & Reeves, 2003). Additionally, the engagement and motivation important to authentic learning theory are significant to better understanding how project-based learning activities engage and motivate learners.

**Self-directed learning.** Self-directed learning theory posits that individual learners can be taught to take more responsibility for and control of their own learning (Knowles, 1975; Heimstra, 1999; Merriam, 2001; Cost & Kallick, 2004). Knowles (1975) describes self-directed learning to be "a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating their learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes" (p. 18). Although the readiness for self-directed learning may vary from individual to individual, it is believed this potential exists to some degree in every learner (Grow, 1991).

Self-directed learning was first associated with andragogy—the art and science of helping adults learn—and adult learning theory; it stems from the belief that learners become more self-directed as they mature (Merriam, 2001). It does not necessarily take place in isolation from others, including teachers, but it can take place in many forms each, ultimately, empowering individuals and allowing them to transfer learned knowledge and skills from one educational setting to another (Heimstra, 1999). Self-directed learning focuses on how learning can be made more meaningful and relevant to students with respect to the actions they will take in their lives beyond school (Costa & Kallick, 2004). Skills or behaviors commonly found in learners engaged in self-directed learning include intrinsic motivation, goal setting, identification and access of

Researchers have identified elements of a process for self-directed learning which can include setting learning goals, identifying resources, and evaluating the achievement of the learning goals (Knowles, 1975). Grow (1991) found that learners advance through four stages of increasing self-direction: dependent, interested, involved, and self-directed. For dependent learners, learning is teacher-centered: “[T]hey need an authority-figure to give them explicit directions on what to do, how to do it, and when” (p. 6). Interested learners are what Grow (1991) describes as “available” (p. 7) learners, interested and able to be motivated, engaging in two-way dialogue with their teachers. Involved learners possess skill and knowledge and are willing participants in their own learning, but they may need to develop more self-confidence, direction or collaborative skills. Finally, Stage 4 or self-directed learners are willing and able to take control of their own learning with or without the help of others. Examples of Stage 4 or truly “self-directed” learning activities include internships, term projects, independent study, senior project, dissertation, student-directed discussion with teacher involvement as invited. Likewise, in his model Grow (1991) views the role of teachers as evolving from authority and coach (Stage 1), to motivator and guide (Stage 2), to facilitator (Stage 3), and, finally, to consultant and delegator (Stage 4) as students become increasingly self-directed.

In these ways, self-directed learning theory contributes to a deeper understanding of the benefits of project-based learning activities as they provide students with opportunities to take more responsibility for and control of their own learning. Activities that are self-directed allow for transference of knowledge from the classroom to a chosen field and allow students to understand the meaning and relevance of their learning. Projects like these are a process in which
students: take the initiative, with the help of others; diagnose their learning needs and formulate learning goals; identify human and material resources for learning; and have a hand in choosing, implementing, and evaluating appropriate learning strategies. Those students who are truly engaged are motivated by their own interests and questions, work independently and with the assistance and guidance of others, and seek help when needed (Grow, 1991).

Limitations

Since both authentic learning theory and self-directed learning theory both rely on individuals growing and gaining confidence in their own abilities as learners and individual agents in their own learning (Knowles, 1975; Herrington & Oliver, 2000; Reeves, Herrington & Oliver, 2002), the researcher was concerned about how few prior opportunities students have had at Bayside High School to nurture these habits of mind in relation to independent learning in a real-world setting. As a result, the senior project may be a student’s first real opportunity to take advantage of an authentic, self-directed learning experience after three years of high school. In this case, are students ready to “take control of and have a powerful voice in their own education and development” (Bayside High School, 2017, p. 2) if they have never been asked, encouraged or allowed to do it before?
Chapter II: Literature Review

For this study, the literature review explores the nature of the learning and skills that senior projects have been found to foster and instill in students as a form of project-based learning by exhibition. It will consider how senior projects allow students to experience the benefits of authentic, self-directed learning and how the deeper learning that results provides them with the skills and competencies judged necessary for success in today’s world.

Senior Projects

As a form of project-based learning by exhibition, senior projects positively contribute to students’ academic and personal growth (Summers, 1989; Cowan & Carter, 1994; Nicolini, 1999; Egelson, Harman & Bond, 2002; Wehrs, 2002; Rickey & Moss, 2004; Carolan, 2008; Pennacchia, 2010; Skeldon, 2012; Henning, 2016). This form of authentic assessment also helps them engage in their learning and avoid senioritis (Lorenz, 1999; Wehrs, 2002; Duff, 2006; Skeldon, 2012; Blanchard, 2012), and contributes to the development of college and career readiness skills and their perceptions of self-efficacy in life after high school (Pennacchia, 2010; Blanchard, 2012; Nishimura, 2014).

Academic growth. Researchers found that senior projects positively contribute to students’ academic growth and development with respect to certain skills and competencies. Summers (1989) observed teachers in one Oregon high school emphasize reading, writing and speaking skills in their senior English classrooms while engaged in a senior project, pushing students to be responsible, active users of the language. As a result, students reported better understanding the value of these skills and how they enabled them to more effectively explore a topic of their interest. Additionally, Wehrs (2002) found that seniors at one California high school reported they were more academically engaged, better able to work independently, and
improved as writers as a result of their successful completion of the school’s senior project. Teachers at the school agreed that writing skills improved for students, reporting that the research paper requirement is the most significant learning stretch for most students, with one senior teacher saying she didn’t believe many of her students had ever had to write a research paper before senior project. Egelson, Harman and Bond (2002) found that students at four North Carolina High Schools identified distinct areas in ways they believed their writing had improved as a result of senior project; these included: conveying thoughts or opinions effectively, using language accurately, organizing and relating ideas, documenting sources, synthesizing information from several sources, proofreading and editing, and writing to persuade or justify a position (p. 21). In addition to improved writing skills, Carolan (2008) found that students at one North Carolina high school felt their research and speaking skills improved as a result of the project. These students said by completing the senior project they had demonstrated their ability to access, research, manage and make critical judgments about information with respect to what was essential to include in their final research papers and presentations to the judges. Similarly, Henning (2016) found that students at a Midwestern high school who actively engaged with their senior project demonstrated critical thinking, inquiry, and problem solving skills.

Studies also revealed that learners who struggle the most academically can benefit the most from completing a senior project with proper support. Studying a senior project at a high school in Indiana, Rickey and Moss (2004) found that teachers observed across-the-board improvements in student writing and research skills over the first two years of the project; however, they also found that students who typically struggled academically—and who were most likely headed to a two-year college or an apprenticeship after high school—reported experiencing the most success with the project. Henning (2016) offered a possible explanation...
for this phenomenon, finding that “students who achieved academically were less likely to take the senior project seriously, because they did not see the need to increase learning in which they were already proficient” (pp. 162-163). She found this to be the attitude of many of the parents of high-achieving students she interviewed as well. Duff (2006) found that parent support was an important mitigating factor in student success and engagement with senior project. Still, Carolan (2008) found that struggling students benefitted from peer assistance during their senior project, receiving coaching and feedback in class, after school or when working in small groups or in pairs.

Finally, researchers found that graduates who have successfully completed a senior project and have begun their post-secondary pursuits realize and understand the academic benefits of the project. In surveying and interviewing graduates of one Rhode Island high school—some of whom went directly to college after graduation and others who entered the workforce—Penacchia (2010) found that all of them reported that their senior project experience helped them develop more effective written and oral communication, research and study skills. Egelson, Harman and Bond (2002) concluded that benefits like improved public speaking, researching, writing, interviewing, and planning may not be realized until students are out of high school and actively engaged in post-secondary education or the workforce. The researchers reported that it “seems clear that the effects of the Senior Project experience are not necessarily evident in the short-run” (p. 22). Similarly, Nishimura (2014) found that most of the recent graduates he studied reported that they did not truly appreciate the college and career benefits of the senior project until after they graduated from high school. “While it is reasonable to expect 12th grade students to attain these skills in high school,” one of the participants concluded, “they
will not fully understand the necessity and extent of these skills until they are actually in college or in their career” (p. 116).

**Personal growth.** In addition to these positive gains in academic skills and understanding, researchers have found that senior project advances personal growth. Carolan (2008) found that students who successfully completed a senior project valued the responsibility the project taught them with respect to their selecting, contacting, working with and learning from a mentor in the community. They appreciated the fact that it was largely an independent effort in which they had to make their own decisions about important aspects of their projects—e.g., choice of topic, mentor, and product—the outcomes of which were ultimately their responsibility. Studying students and teachers at one high school in Oregon, Cowan and Carter (1994) found that the school’s decision to have student’s write a reflective senior project paper led students to personally value the experience more. The paper may incorporate the research, interviews, and the gathering and sorting of relevant information the student does to better understand a chosen topic or field, but also it must reflect on what they have encountered, accomplished and learned during the “product” phase of their project—i.e., a minimum of 15 hours spent working with a mentor. The researchers found that although many students struggle to find a personal voice, many reported that the paper was the best or most important writing they had ever done (Cowen & Carter, 1994). Similarly, Egelson, Harman and Bond (2002) found that the greatest “personal outcomes” graduates said they experienced after completing a senior project were a general sense of accomplishment, self-confidence, and a better understanding of how hard others work. In his study of faculty, community and alumni judge’s perceptions of the senior project at one Rhode Island high school, Skeldon (2012) found that the community judges with no affiliation to the school tended to view the seniors whose final presentations they
assessed as demonstrating strong decision-making skills, self-esteem and confidence. He also found that alumni/ae judges—graduates who had completed their own senior project at the same school—tended to focus on the social-emotional challenge of getting up in front of a group of people the presenters did not know, a source of personal growth that Nicolini (1999) also noted in her study of students at her high school in Indiana.

**Engagement and meaning.** Studies also revealed that participation in a senior project can help students engage more in their learning and make their senior year more meaningful. Duff (2006) found that senior project engagement by students at the 13 demographically different high schools he studied was largely determined by two factors: a student’s previous level of academic achievement and current level of academic engagement entering senior year. Similarly, Skeldon (2012) found a positive correlation between academic achievement and student success on senior project. Using the assessment scores community and faculty judges awarded students on their final portfolios and public presentations as a measure, he observed that students with higher overall grade point averages (GPA) tended to perform better on the capstone project than their peers with lower overall GPA. Additionally, Duff (2006) concluded that students who experienced greater parent support and senior project self-efficacy—i.e., “[s]tudents who felt more confident and less worried about their success in Senior Project” (p. 200)—generally reported greater engagement. Still, Lorenz (1999) concluded that students at a high school in Michigan became more engaged and excited when they entered the product or fieldwork stage of their senior projects: “The students efforts and their interaction with the mentors and other community members was intense,” he observed, attributing their level of engagement to the fact that personal choice drove their project topics (p. 83). Similarly, Blanchard’s (2012) study of students, faculty, and administrators at a Massachusetts high school
in its first year of senior project found that students appreciated and were satisfied with the opportunity to choose a topic of personal interest and express their learning in creative ways. Most of the students she studied confirmed that their project topic was meaningful to them—i.e., related to a personal interest, future goals, etc.

Additional studies confirm these findings that the element of student choice involved in the project is what allowed it to “come alive” (Lorenz, 1999, p. 85) for students making them more likely to invest themselves in their own learning and become more autonomous and independent (Winters, 2000; Carolan, 2008). Winters (2000) found that senior project provided students with a meaningful way of incorporating their own interests into their education and an opportunity to research and explore these interests both in school and the community. He concluded that the project was an example of emancipatory education through which teenagers “experience critical learning and develop critical knowledge . . . [preparing them] for the adult world” (p. ix). Further, Egelson, Harman and Bond (2002) and Henning (2016) found that as students apply more critical thinking, inquiry, and problem-solving skills throughout their projects, they became more engaged, organized and empowered by senior project.

**Combating disinterest.** Given these positive findings with respect to the increased levels of engagement and relevance the senior project can generate in students, researchers have concluded that the project can curb or delay senioritis: the predictable disengagement and disinterest of seniors from their studies, especially during the second semester of their final year of high school (Blanchard, 2012). Duff (2006) concluded that the autonomy the project affords students, combined with parent support and clear expectations, were the keys to enhancing students’ sense of efficacy and, in turn, their meaningful engagement in a senior project. He suggested that project advisors and coordinators pay strict attention “to keeping project-relevant
confidence high” for all students given his findings that self-efficacy has a direct effect on senior project engagement (p. 205). This relevance, Duff (2006) and Blanchard (2012) found, is instrumental with respect to senior project and its ability to combat senioritis. Blanchard (2012) concluded: “[B]ased 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” (p. 106). Wehrs’ (2002) observations at his own California high school after its first year of senior project are consistent with these conclusions. Both students who successfully completed a senior project and their teachers agreed that the project kept students involved and active during their senior year, making the year more meaningful for some and difficult for others.

**College and career readiness.** Studies have further shown that senior project contributes to the development of college and career readiness skills and their perceptions of self-efficacy in life after high school. Nishimura (2014) found that senior project does contribute positively to the development of college and career readiness skills in students. He studied eight recent high school graduates who all graduated from the same Hawaiian high school who successfully completed a senior project. Nishimura defined college and career readiness as comprising communication, critical thinking, collaboration, problem solving, and time management skills as well as self-efficacy. Citing his level of motivation and initiative, one participant compared his senior year of high school as comparable to his first year of college: “the environment is the same,” he said (p. 113). Other graduates Nishimura studied cited the fact that the project forced them to work with adults and their peers, deliver a professional presentation, and make decisions on their own outside of the classroom, all of which contributed to the development of college and
career readiness skills. Similarly, Penacchia (2010) surveyed graduates from a Rhode Island high school and found that they felt senior project “prepared them for college and work readiness, allowed them the opportunity to explore new experiences outside of the high school setting, and gave them a sense of accomplishment . . . [and feeling] more self-confident” (p. 96). With respect to students own perceptions of self-efficacy in their lives after high school given their senior project experiences, Blanchard (2012) found that current seniors felt better prepared to perform college level work and that they felt positive about their ability to be successful after high school. They felt affirmed by the opportunity to demonstrate their knowledge in authentic and creative ways and the feedback they received from their teachers, advisors, mentors and evaluators. Finally, Winters (2000) found that the six students he studied all perceived the project as preparing them for college and life beyond high school, specifically with the research and writing skills it emphasized. Through their completion of the project some students increased their interest in a particular career path while others discovered that their future career pursuits might lie in a different direction.

In these ways, the experiences students engage in throughout their projects—e.g., topic selection based on interest, fieldwork, engagement with a mentor, personal interviews, and presentations to faculty and community members, etc.—encourages them to be active, autonomous learners and inspires them with confidence in their own abilities and interests. Schools that provide students with the opportunity and supports to complete a successful senior project are engaging them in project-based learning by exhibition.

**Exhibitions**

In the wake of the publication of *A Nation at Risk* in 1983 (National Commission on Excellence in Education, 1983; Christie, 2000), exhibitions of learning emerged as one way to
engage learners and challenge them to show what they know rather than rely on seat time or test results to measure learning. Sizer (1984) proposed “exhibitions of mastery,” arguing that they were “a real reading of what a student can do” and were “the only sensible basis for accountability” (p. 215). He described effective exhibitions as complex, time-consuming, flexible and student-centered, providing students with choice—“not all students show themselves off in the same way” —and empowering them as learners—“There is self-esteem to be gained from being the key worker” (p. 215). This personalized aspect of exhibitions, according to Sizer, is critical: “[I]t signals to the student that he or she is important as an individual” (p. 216). For Sizer (1999), personalized learning means the “insistent coaxing out of each child on his or her best terms of profoundly important intellectual habits and tools for enriching a democratic society.” In this respect, exhibitions are one way of assessing a student’s ability to demonstrate how well he or she can exhibit and use specific “habits and tools.” Similarly, Davidson (2009) describes exhibitions as “public demonstrations of mastery that occur at culminating moments, such as at the end of a unit of study, the transition of one level of schooling to the next, and graduation” (p. 36). For example, high school students at the School of the Future in New York City must successfully complete four exhibitions in order to graduate: two in the humanities, and one each in science and math. One 10th grader demonstrated her proficiency in scientific inquiry by extending a classroom project to consider how stem cells might cure multiple sclerosis. After reviewing the literature and interviewing scientists in the field throughout the school year, she wrote a 17-page paper on the topic which she submitted for review by both faculty and members of the scientific community. Her final exhibition consisted of a multimedia presentation after which she fielded questions and received a critique of her paper (Davidson, 2009).
In this way, exhibitions provide students with two key elements: practice in disciplined inquiry and relevance and value for students (Bingen, 1997; Davidson, 2009). In English classrooms, Bingen found these assessments began with a simple but challenging question: “What do you wish to do or what do you want to know more about?” (p. 33). One student answered this question by producing an instructional video for a local cable television station as part of his exhibition to demonstrate his mastery of reading, writing, speaking and listening competencies. Upon completion, he said it was “a perfect connection between school and ourselves; it showed how what we learn in school can help us do what we love even better. It was the perfect way to end my high school career” (p. 36). King, Newmann and Carmichael (2009), call this “authentic intellectual work” (p. 1) and find it is the difference between the conventional academic work in which students are often engaged—i.e., learning tasks founded on memorization and the reporting on specific information and content—and more complex, socially or personally meaningful work. This work involves original application of knowledge and skills, entails careful study of the details of a particular topic or problem and results in a product or presentation that has value beyond success in school (King, Newmann & Carmichael, 2009). Wiggins (2006) sees this transfer of knowledge as an indicator that students have not only learned how to adapt prior learning to novel and important situations but also be more apt to rise to the challenge of taking the various content they encounter and applying it in increasingly complex contexts.

Researchers also consider exhibitions a form of authentic assessment because they simulate the kinds of open-ended challenges faced by people working in a field of study (Darling-Hammond, 1993; Darling-Hammond, Ancess, & Falk, 1995; Wiggins, 2006; Davidson, 2009). Darling-Hammond (1993) cites four criteria for authentic assessment: it must
reflect performance in the field, be measured by well-articulated performance standards, encourage self-assessment and improvement, and be presented or defended publicly and orally to ensure that mastery has been achieved. In their study of pre-service high school math teachers, Herrington and Oliver (2000) used additional criteria to measure participants’ learning using authentic assessment; they found it must involve multiple indicators of learning; be an open-ended, complex task with no simplification of procedures, requiring both a written and oral responses; and be assessed only on the results of a student’s investigation—i.e., no additional tests.

Further, Darling-Hammond, Ancess and Falk (1995) studied five high schools in which students were all engaged in some form of “authentic” assessments—e.g., senior projects, portfolios, etc. They found that these practices led to improved mastery of intellectual and practical skills for students which, in turn, were transferable to “real life” social settings and workplaces. At Central Park East High School in New York City, the researchers observed students working on portfolios of their work in 14 curricular areas which they must complete in order to graduate. A graduation committee of teachers from a variety of grade and subject levels evaluates each portfolio—which takes students two to three years to create—and hear each student’s public defense of his or her learning. At Hodgson Vocational Technical School in Delaware, the researchers studied the school’s three-part senior project, an authentic assessment that requires students to choose an area of “shop based” study about which they wish to learn more, research this topic and write a research paper on it, produce a product related to their area of study, and present and defend their work before a panel of three faculty members. In this way, Darling-Hammond, Ancess and Falk’s (1995) findings reflect Wiggins (2006) own conclusions on authentic assessment: “It's simply performances and product requirements that
are faithful to real-world demands, opportunities, and constraints. The students are tested on their ability to ‘do’ the subject in context, to transfer their learning effectively.”

**Project-Based Learning**

Exhibitions like these are also a form of project-based learning. Project-based learning is a student-centered form of instruction which is based on three principles: learning is context-specific, learners are involved actively in the learning process and they achieve their goals through social interactions and the sharing of knowledge and understanding (Kokotsaki, Menzies & Wiggins, 2016). Thomas (2000) offered additional criteria for what constitutes project-based learning including the need for projects to be realistic, central to the curriculum and focused on questions or problems that drive student exploration. This “need to know” is central to project-based learning and teachers must take care to structure projects in a way that encourages and facilitate each student’s “journey” (Efstratia, 2014, p. 1259).

Student interest and choice are integral to effective project-based learning. Efstratia (2014) found that successful teachers, first, capture student interest and desire to understand and find out more about a driving question related to real world issues and problems. In the high school science classrooms he studied, students were then put in charge of how they conducted their inquiry with teachers serving as facilitators, helping them to frame, structure and revise their work and findings before presenting them to a real audience. Gresalfi, Barnes and Cross (2012) also found that teachers may need to give students insight into the content of the desired response to project-based learning in order to provide them with scaffolding and prepare them to recognize and take up the learning opportunities ahead of them. When studying fourth grade students engaged in a project at the conclusion of an architecture unit, Tasci (2015) found that when supports like these were provided students experienced positive gains in academic
achievement and learning permanence and functionality. The project required students to consider questions like “What should be done for a sustainable environment?” and “Can a building be ecological?” After conducting their own research and taking into account their region’s own climate and climate data, students designed environment-friendly ecological buildings and created models they presented and explained to their teachers and peers (pp. 773-774).

Project-based learning can also positively influence student perceptions of their learning, making it more satisfying and enjoyable. Hugerat (2015) studied 458 ninth graders in science classrooms at two middle schools where project-based learning was featured in half of them and more traditional instructional methods in the other half. Along with a more positive outlook on their learning, students in the project-based learning classrooms also reported feeling more support from their teachers and significantly more positive teacher-student relationships. Other studies have indicated increased student motivation, enjoyment, and engagement in a project-based classroom, particularly with female middle and high school students showing greater interest in learning STEM (science, technology, engineering and math) subjects (Lou, Tsai, Tseng & Shih, 2014; Lou, Liu, Shih, & Tseng, 2011; Asad & Barak, 2012). In their study, Asad and Barak (2012) found that students did not demonstrate high interest and motivation during an initial introduction to image processing; however, they reported: “this situation changed significantly when the students prepared individual projects involving tasks that were meaningful to them, when their tasks involved enhancing their own pictures or those of their family members” (p. 230). Similarly, Lou, Tsai, Tseng and Shih (2014) found that, in addition to promoting STEM knowledge integration and learning among female high school students, project-based learning activities had a positive impact on students’ imaginations, eliciting their
ability to take new information and knowledge and process and integrate it in new, innovative ways.

These intrapersonal benefits of project-based learning lead to an increased sense of self-efficacy and intrinsic motivation in students. Kaldi, Filippatou and Govaris (2011) found that elementary school students working in collaborative groups on a cross-curricular environmental science project experienced an improvement in the quality of their learning due to the exchange of knowledge and ideas with their peers. At the middle school level, Lattimer and Riordan (2011) found that several elements of project-based learning—including its authenticity, application of learning and active exploration—contributed to students’ growing confidence in their own abilities and accomplishments and the knowledge that they can transfer these skills to other areas of their lives both now and in the future. Such increases in positive attitudes towards learning were also observed by Asiabanpour (2010) at the high school level during a weeklong pre-engineering camp for high school students where participants were exposed to new knowledge, skills, and technologies as they worked to design their own computer-model bridge. At the conclusion of the project, most students reported that they were satisfied with and enjoyed their learning and all said they would recommend the experience to a friend. “I learned a lot . . . and want to do it again. It really opened my eyes to a whole new list of things I enjoy doing as a job,” reported one participant (p. 10). Similarly, Parker, et. al., (2014) found that a more project-based approach to teaching high school students in an Advanced Placement U. S. Government and Politics course led students to perceive their learning as more beneficial and powerful to them, especially when it came to taking the standardized AP exam. Participants acknowledged the benefits of the more traditional lecture components of the course; however, many reported a deeper understanding of the core ideas and skills and a greater sense of self-efficacy. “You
actually get to understand what all goes into politics and you become a lot more involved or at least a lot more aware of how things work,” one student told Parker and his team of researchers, “so you can make sense of things while other people may say things about government, you can actually understand why government works the way it does” (p. 554).

**Authentic Learning**

Like project-based learning, authentic learning asserts that students learn best when engaged in real-world, complex problem-solving that is meaningful to them (Herrington & Oliver, 2000). Reeves, Herrington and Oliver (2002) determined that authentic activities that engage students in authentic learning are contextualized in the real world, matching as much as possible the work of professional practice. These activities present students with problems that are not easily solved and leave learners to develop the process they will follow to find a solution or solutions. They also take time and call for the investment of both cognitive and personal resources —e.g., collaboration, commitment, etc. Additionally, authentic activities do not reward imitation or the usual solutions but, instead, require that students consider multiple perspectives and approaches to arriving at an answer or solution. They cannot be done alone and ask students to collaborate with one another or an expert in the field to help them achieve their goal. While completing an authentic activity, students must reflect on their choices both individually and with their collaborators as they move forward. These activities also call upon students to bring to bear their learning from multiple disciplines and do not permit them to remain comfortably in one domain, drawing only upon one area of knowledge or set of skills. Assessments of these activities are closely tied to the nature of the task itself and remain rooted in the real world. They are complete in and of themselves, resulting in a finished product not just an installment or step in a longer process (p. 564). Finally, according to Reeves, Herrington and Oliver (2002), there is
no one right answer or outcome for authentic activities, no single correct response using predictable methods. Various combinations of these characteristics and traits were noted and observed by researchers who studied effective authentic learning activities at various levels of education both in the classroom and online (Hill & Smith, 1998; DeCastro & Cho, 2005; Hill & Smith, 2005; Borthwick, Bennett, Lefoe & Huber, 2007; Lombardi, 2007; Hui & Koplin, 2011).

**Engagement.** Studies found real world conditions and problems made learning more relevant and tangible for both high school and college students, leading to increased levels of engagement and activity in their learning (Hill & Smith, 1998; Hill & Smith, 2005; Borthwick, Bennett, Lefoe & Huber, 2007). Hill and Smith (2005) identified four qualities of authentic learning—mediation, embodiment, distribution, and situatedness—and two supporting qualities—motivation and multiple literacies. Studying high school students, the researchers concluded that these qualities add purpose, value, and meaning to the learning students do. At the college level, Borthwick, Bennett, Lefoe and Huber (2007) studied three distinct models for authentic learning: apprenticeship, simulated, and enminding. The apprenticeship and simulated models involved either bringing students into the field to experience a profession first-hand or bringing simulated, discipline-specific tasks into the classroom; however, the enminding model, in which “authenticity comes from the connection between a student’s experiences and the disciplinary mind” (p. 16), not only places the student in the field of the professional but also requires the student to think like him or her as well: “In the enminding model, all of the elements (students, classroom activities, the discipline and the profession) are considered to be part of the real world,” according to Borthwick, Bennett, Lefoe and Huber (2007, p. 16).

**Discomfort.** Not surprisingly, researchers found that students, when first confronted by authentic learning opportunities and authentic methods of assessing their learning, were
sometimes put off by newness of the experience and the amount of time it took to complete the task (DeCastro & Cho, 2005; Hui & Koplin, 2011). Other studies found that both teachers and students too often relied on traditional instructional methods which can lead to binary—i.e., right or wrong, black or white—expectations and preferences for both groups (Lombardi, 2007; Mantei & Kervin, 2009). When confronting students with the uncertainty, ambiguity, and conflicting perspectives associated with authentic learning, both teachers and learners can feel uncomfortable. To this end, Windham (2007) suggested that one way to ease these tensions is to provide students with more authentic learning experiences and scaffolding them appropriately as they progress through school.

**Self-Directed Learning**

Unlike authentic learning, self-directed learning was first associated with andragogy—the art and science of helping adults learn—and adult learning theory; it stems from the belief that learners become more self-directed as they mature (Merriam, 2001). Knowles (1975) describes self-directed learning to be "a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating their learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes" (p. 18). He identified elements of a process for self-directed learning which can include setting learning goals, identifying resources, and evaluating the achievement of the learning goals (Knowles, 1975). Skills or behaviors commonly found in learners engaged in self-directed learning include intrinsic motivation, goal setting, identification and access of learning resources, help-seeking, self-evaluation, independent work, and social networking (Tough, 1971; Knox, 1973; Knowles, 1975; Skager, 1979). Tough (1971) found that adult self-directed learning projects are “major, highly deliberate effort[s] to gain
certain knowledge or skill (or to change in some other way)” and are often initiated and planned by the learner (p. 1). In other cases, a self-directed adult learner may use a non-human resource (an instructional manual or video, etc.), another experienced individual or mentor, or a group (often led by an instructor) to aid in the planning process (Tough, 1971). Knox (1973) noted the value of a mentor’s role in adult self-directed learning, finding that it is “comparable to the teaching part of the teaching-learning transaction” with an emphasis on the learning part of the transaction that includes five components: the needs, setting, objectives, activities, and evaluation of the learning and the learner him/herself (p. 19).

**Stages.** In an instructional or classroom setting, Grow (1991) found that learners advance through stages of increasing self-direction and that teachers can assist or retard that development. His Staged Self-Directed Learning Model asserted that learners can progress through four stages: dependent, interested, involved, and self-directed; likewise, the role of teachers evolve from authority and coach, to motivator and guide, to facilitator, and, finally, to consultant and delegator as students become increasingly self-directed. Examples of Stage 4 learning activities include internships, term projects, independent study, senior project, dissertation, student-directed discussion with teacher involvement as invited (Grow, 1991). Skager (1979) also identified four distinct modes of learning or ways of structuring educational environments that are conducive to self-directed learning—experiential learning, discovery learning, the open classroom, and structured individualization—and concluded that if self-direction in learning is significantly influenced by one kind of pedagogy or another, it occurs because learners are expected to learn in a consistent process. Each mode allows students varying experiences, both in and outside of the classroom, along with different levels of freedom, choice, and self-direction (Skager, 1979).
Readiness. Researchers found varying indicators for predicting successful young adult, self-directed learners. After developing a Self-Directed Readiness Scale, Guglielmino (1977) surveyed high school and college students, finding that a highly self-directed learner is:

- one who exhibits initiative, independence, and persistence in learning; one who accepts responsibilities for his or her own learning and views problems as challenges not obstacles; one who is capable of self-discipline and has a high degree of curiosity; one who has a strong desire to learn or change and is self-confident; one who is able to use basic study skills, organize his or her own time and set an appropriate pace for learning, and to develop a plan for completing work; one who has a tendency to be goal-oriented and enjoys learning. (p. 73)

Similarly, Oddi’s (1986) continuing learning inventory measured three researched-based factors related to a student’s readiness for self-directed learning: proactive drive, commitment to learning, and cognitive openness. Olivera and Simões (2006) found that among undergraduates involved in self-directed learning, self-efficacy, conscientiousness, epistemological beliefs, and beliefs about internal control most influenced their level of engagement in this type of learning. Studying secondary students engaged in online courses, Carson (2012) found a direct correlation between self-directed learning and academic achievement with no impact for a subject’s gender or race.

Deeper Learning

Authentic and self-directed learning are both critical to students becoming deeper learners and developing distinct skills in the cognitive, interpersonal and intrapersonal domains (Martinez & McGrath, 2014; National Research Council, 2014). Deeper learning competencies include mastery of academic content, critical thinking and problem solving, effective
communication, collaboration skills, learning how to learn, and developing academic mindsets (Martinez & McGrath, 2014; Vander Ark & Schneider, 2014; Zeiser, K. L., et. al., 2014).

Table 2.2.

*Deeper Learning Framework (William and Flora Hewlett Foundation, 2013)*

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<th>DEEPER LEARNING FRAMEWORK</th>
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<tr>
<td><strong>Cognitive Domain</strong></td>
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<tr>
<td>● Master core academic content</td>
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<td>● Think critically and solve complex problems</td>
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The National Research Council (2012) extends this definition of deeper learning “as the process through which an individual becomes capable of taking what is learned in one situation and applying it to new situations (i.e., transfer)” (p. 5). The Council (2012) concluded that deeper learning competencies are essential for acquiring the transferable skills needed to succeed in the 21st century and asserted that these can only be achieved through systematic instruction and sustained practice, citing the need for additional instructional time and resources. Twenty-first century skills, which share the goals of deeper learning competencies, emphasize essential skills for success in today’s world, such as critical thinking, problem solving, communication and collaboration, all within the context of key knowledge instruction and global themes (Trilling & Fadel, 2009; Martinez & McGrath, 2014). The 21st century learning outcomes include demonstrating creativity and innovation, making judgments and decisions, analyzing media, and applying technology effectively (Partnership for 21st Century Learning, 2015). Martinez and McGrath (2014), chose the term deeper learning over “twenty-first century skills” or “college and career readiness” both for its simplicity and “because it fully encompasses the educational
goals that, taken together, constitute the foundation for developing the single most important ability students should possess: the capacity for learning how to learn” (p. 3). For Wagner (2012), he was even more to the point; he called them “survival skills” (p. 12).

In their study of eight high schools that value such skills and pursue deeper learning, Martinez and McGrath (2014), found that all of the schools sought to:

- Establish cohesive, collaborative learning communities that sharply differ from the top-down national norm;
- Empower and encourage students to become more self-directed, creative, and cooperative by getting the out of their chairs and more directly involved in their own education;
- Make curricula more engaging, memorable, and meaningful by integrating subject and establishing relevance to real world concerns;
- Read outside classroom walls to extend the idea and purpose of learning beyond school, forming partnerships with businesses, organizations, research institutions, and colleges and universities;
- Inspire students by endeavoring to understand that their talents and interests, customizing learning whenever possible to discover the motivational “hook” for each young person; and
- Incorporate technology purposefully to enhance rather than simply automate learning (p. 15).

All of the schools featured various elements included in a senior project—student-selected topics, research-based writing and critical thinking, exploration in the real world, working with a mentor, high stakes presentations of value and learning, etc. —but at a cultural level, not as a
stand-alone project done once during a student’s time at school: “Not all of the teachers we observed on our school visits described what they were doing as project-based learning,” Martinez and McGrath (2014) wrote. “Yet, in all cases, we saw kids working independently or in groups on project that they conceptualized and executed” (p. 60).

Similarly, in examining schools within the William and Flora Hewlett Foundation Deeper Learning Networks, Huberman, Bitter, Anthony, and O’Daye (2014) and Vander Ark and Schneider (2014) and Zeiser, et. al. (2014) found specific strategies employed across the schools targeting the deeper learning competencies in the three domains: cognitive, interpersonal, and intrapersonal. They found that strategies to build competencies in the cognitive domain include setting explicit goals to develop higher order thinking skills, aligning teacher-developed curriculum with standards, integrating real-world problems and project-based learning in instruction, and using formative, portfolio, and exhibition assessment strategies (Huberman, Bitter, Anthony & O’Day, 2014; Vander Ark & Schneider, 2014; Zeiser, et. al., 2014). In nurturing and developing the cognitive domain competencies of mastering academic content, thinking critically and solving problems, some schools in the network require students to complete short and long-term projects that span disciplines, align with standards, and require the transfer of knowledge and critical thinking. Additionally, in many cases, these deeper learning schools utilize differentiation and personalization to support all learners in achieving cognitive deeper learning competencies (Huberman, Bitter, Anthony & O’Day, 2014; Vander Ark & Schneider, 2014; Zeiser, et. al., 2014).

Schools in the deeper learning network also work to create opportunities to develop interpersonal skills of communication and collaboration (Huberman, Bitter, Anthony & O’Day, 2014; Vander Ark & Schneider, 2014). Many of the schools’ projects and activities involve
students working in teams, often in conjunction with adults. The schools set explicit interpersonal goals for the students, incorporate collaborative assignments into instruction, and require students to present their work and provide peer feedback as critical elements of the assessment system. In addition to collaborative group work in the classrooms, these schools frequently engage students in internships, giving students the chance to connect real-world learning to communication and collaboration (Huberman, Bitter, Anthony & O’Day, 2014; Vander Ark & Schneider, 2014; Zeiser, et. al., 2014).

Finally, deeper learning network schools understand that to work effectively and collaboratively with their peers, students need to grow in the interpersonal domain by developing positive academic mindsets and learning how to learn. Academic mindsets influence the students’ motivation and engagement. In learning how to learn, students develop approaches to tracking their progress and self-directing their learning (Huberman, Bitter, Anthony & O’Day, 2014; Vander Ark & Schneider, 2014; Zeiser, et. al., 2014). In schools within the deeper learning network, teachers explicitly work with students on learning how to learn and developing positive academic mindsets, employing instructional, strategies such as the use of study groups, peer tutoring and mentoring, individualization, offering student choice, and encouraging the self-monitoring of progress to make learning visible (Huberman, Bitter, Anthony & O’Day, 2014; Vander Ark & Schneider, 2014; Zeiser, et. al., 2014).

Ultimately, researchers found that schools successful in supporting deeper learning targeted their overall structures and culture in addition to promoting the instructional strategies across the three domains. Some of the common school structures include the use of advisory to support personalization and positive relationships, creative scheduling to support project-based learning, internships, interventions, and personalized school cultures structured around small
classes and teams of teachers and students (Huberman, Bitter, Anthony & O’Day, 2014; Martinez & McGrath, 2014; Vander Ark & Schneider, 2014; Zeiser, et. al., 2014). They found that schools that ensure deeper learning foster a culture that values and supports student-centered instructional strategies by providing opportunities for project-based learning, emphasizing mastery of core academic content and the development of interpersonal and intrapersonal skills (Huberman, Bitter, Anthony & O’Day, 2014; Martinez & McGrath, 2014; Vander Ark & Schneider, 2014; Zeiser, et. al., 2014).

Summary

Senior projects are a form of project-based learning by exhibition that can positively contribute to students’ academic and personal growth and encourage them to engage in their learning, stay focused, and contribute to the development of deeper learning skills and a positive outlook on life after high school. The authentic, self-directed learning opportunities senior projects offer students can provide them with a unique learning experience that extends beyond the classroom walls and is founded in the real world, driven by their own interest and curiosity and guided by their own research and decisions. The cognitive, interpersonal, and intrapersonal deeper learning that can result from such an experience are what researchers say are needed for individuals to be ready for college and/or a career after high school and to succeed and prosper in the 21st century.
Chapter III: Research Design

The problem of practice was how the benefits of senior projects as perceived by recent graduates of Bayside High School may or may not have been of value to them in their lives after high school. The purpose of the study was to determine the extent to which students experienced lasting gains—such as cognitive, interpersonal or intrapersonal skills—after completing their senior projects and graduating, especially with respect to the opportunity for authentic, self-directed, deeper learning with which it presented them. The study was designed to identify and capture themes that provide meaningful insights into what the successful completion of a senior project means for students after they leave high school and embark on their future endeavors with an eye towards making the experience more meaningful for students in the future.

Research Questions

In an effort to determine the extent to which senior project, as currently conceived and constructed, provides graduates with meaningful and lasting benefits, the researcher sought to answer three research questions.

1. What do high school graduates perceive they have gained from their participation in the senior project and how do they perceive these gains as of value to them, while in school and in their lives after high school?

2. How did elements of the senior project in keeping with authentic and self-directed learning contribute to their engagement and learning in the project?

3. Given the desired outcomes of the project as put forth by the school, how do high school graduates believe senior project could be redesigned to have a greater impact on students’ experience and learning both during and after high school?

The first question explored individuals’ perceptions of their senior project looking back
on this experience from the perspective of a high school graduate who has engaged or is about to engage the post-secondary world of college or technical education. It allowed individuals to shape their own conception of the benefits (“gains”) they may have experienced and assign a significance (“value”) to them.

The second question explored the specific elements of the project, if any, that individuals found engaged them as learners by giving them control of their own learning in real world situations and experiences. It allowed graduates to reflect on their own unique experiences of the senior project they constructed for themselves—e.g., mentor, fieldwork, research topic and process, portfolio development, presentation to a panel of educators and community members—and how that experience may have shaped their future selves or endeavors.

The third question explored the ways in which graduates feel the senior project can be improved to have more of a lasting, positive impact on students who must successfully complete it in order to receive a diploma and move on to their lives after Bayside High School. The school asserts that the project “builds a bridge between the skills [students] learn in the classroom and the real world” (Bayside High School, 2015, p. 2) and is meant “to allow [them] to take control of and have a powerful voice in their own education and development both as learners and individuals” (p. 3). This question allowed individuals to voice their own opinions on these claims as informed by their own experience as seniors and as graduates who have gone on to pursue their own interests and careers. It also called upon them to suggest what changes or additions could make the project more meaningful and effective for students still in high school, making “the bridge” they build and the “control” and “voice” they exercise with respect to their own learning even more meaningful and productive for them both in and after high school. The question was framed with the intention of providing useful information to both local and national
educational leaders to improve established or planned senior project programs.

The research questions were developed with a qualitative methodology in mind, and data was analyzed through an interpretive paradigm.

**Methodology**

This was a qualitative study investigating former students’ experience of the senior project at Bayside High School for whom it was a graduation requirement. It was primarily designed to discover if and how these students believe their senior project experience provided them with knowledge, skills, behaviors, or habits of mind they value and have found useful to them in their lives after high school. If qualitative research is “an intricate fabric composed of minute threads, many colors, different textures, and various blend of material” (Creswell, 2007, p. 35), then the researcher sought to explore the diversity and multiplicity of individual experiences generated during participants’ senior years by a project that challenged them to engage in a topic and seek out an experience that was of interest to them and that would yield a learning stretch. In this way, an individual's experience of senior project was as unique as his or her own aspirations, interests, and motivations.

Most of the data was collected using focus groups with recent graduates giving them the space and opportunity to verbally share their personal experience and perceived outcomes. In this way, the researcher hoped to situate himself in the world of his subjects and, through a series of material and interpretive practices, make their world and their experiences visible with the hope of better understanding their shared and unique experiences (Denzin & Lincoln in Snape & Spencer, 2003). (Due to availability and some technical difficulties, the researcher also conducted two telephone interviews with two participants.)
To develop the themes out of the abundant array of information gathered from these focus groups and interviews, the researcher employed first cycle coding which consisted of in vivo coding through which the researcher sought to honor and capture each participant’s unique voice. Young adult voices can sometimes be marginalized, and using their actual words will enhance and deepen the researcher’s understanding of their experiences (Saldana, 2009). Second cycle coding consisted of axial and pattern coding to better develop and identify the emerging themes as identified by the researcher, resulting in a more coherent expression of shared experience and consequences (Saldana, 2009).

The researcher conducted seven focus groups and two telephone interviews with 27 recent graduates of Bayside High School with an emphasis on “understanding the meaning” (Maxwell, 2005, p. 22) and value of the senior project experience for participants. The researcher also conducted a review of the project’s website, handbook, and other documents related to the school’s senior project. The data collected was analyzed through the lenses of self-directed learning theory and authentic learning theory (Herrington & Oliver, 2000; Gibbons, 2002).

Research Tradition

This research was a qualitative study targeted at obtaining insight into how soon-to-be and recent graduates perceive the value of their successful completion of a senior project as high school seniors. This “single focus” (Creswell, 2007, p. 45) was expanded as the study progressed to incorporate comparisons of different viewpoints and relating factors.

Qualitative inquiry was well-suited to explore the problem of practice the researcher intended to address by “[keeping] a focus on learning the meaning that the participants hold about the problem or is, not the meaning that the [he] brings to the research” (Creswell, 2009, p. 175). Consequently, qualitative inquiry “[empowered] individuals to share their stories, hear
their voices, and minimize the power relationships that often exist between a researcher and the participants in a study” (Creswell, 2007, p. 40). In this case, the participants were former students at the high school at which the researcher is a teacher leader. Given this situation, qualitative inquiry was an apt choice to not only privilege and value the experiences of these individuals, but also to capture the reality with respect to the beliefs, behaviors and social constructs that operate within the situation (Ritchie & Lewis, 2003).

The researcher originally considered phenomenology or a case study, yet, ultimately, settled on the principles of general qualitative inquiry as the appropriate choice for the problem of practice. At first, the study looked to be a good fit with the characteristics of a phenomenological inquiry which seeks “to understand several individuals’ common or shared experiences of a phenomenon” (Creswell, 2007, p. 60), in this case, the senior project; however, an important element of phenomenology is that it often involves participants’ emotional response to an intense experience, such as grief over losing a loved one, marginalization from a group, or a surgical procedure (Creswell, 2007). No such comparable component was immediately evident in looking at high school graduates’ learning experiences with the senior project and its impact on their post-secondary lives. Likewise, a case study initially appeared to be an appropriate approach given the inquiry’s focus on an issue “explored through one or more cases within a bounded system” (Creswell, 2007, p. 73)—i.e., the senior project at Bayside High School; however, the researcher’s primary concern was to better understand the experience of students and learn what they valued from this experience after graduation. Case studies rely on multiple sources of information—e.g., observations, interviews, documents, audiovisual materials, etc.—with Yin recommending up to six sources, including archival records and physical artifacts among them (ctd. in Creswell, 2007). The fact that most of the participants in
the study were one or more years removed from their senior project experiences, the researcher judged that such artifacts and other materials from their projects would no longer be available to him. Given these factors, a general qualitative approach to inquiry fit well with the objectives of the study. It provided the researcher with both the guidance and freedom to explore the research questions in depth with the study participants.

Study Site and Participants

The study explored the value recent graduates from Bayside High School attribute to their experience of successfully completing the school’s graduation required senior project program. The program began in 1998 and the project became a graduation requirement in 2004. The project is meant to provide students with an opportunity to experience authentic, self-directed learning by allowing them to choose their own project topic based on their personal interest and curiosity. The research states that such opportunities not only make learning more meaningful and lasting for students, but also provide them with deeper learning skills that can benefit them in future academic and other pursuits (Heimstra, 1999; Herrington & Oliver, 2000; Gibbons, 2002; Lombardi, 2007; Martinez & McGrath, 2014). Therefore, the data collected on current and former students’ perceptions of the value of senior project at this high school informed the research questions.

Participants in the study included members of the Classes of 2013-2017. For the study, members of the Class of 2017 who were at least 18-years old at the time of the focus groups were invited to participate in the study by the researcher directly using the school’s email system. Those participants who graduated before 2017 were invited to participate using the school’s database of parent email addresses. Parents were asked to forward the invitation and study information to their children who would then communicate directly with the researcher. Five of
the seven focus groups were conducted at Bayside High School, two were conducted online using Google Hangouts and, due to technical difficulties and distance, the researcher interviewed two participants over the phone separately.

During the 2015-2016 school year, the senior class at Bayside High School had 204 students and total student enrollment was 1,082 students. Of the members of the Class of 2016, 84% went on to attend a four-year college, 6% went to attend a two-year college, and 10% went on to other schooling. The school’s student population is identified as 89% white, 6% Asian, 2% Hispanic, 2% multiracial, and 1% African American (Bayside High School, 2016). The four-year graduation rate for the Class of 2015 was 95.7% with a stability rate—the proportion of the total student enrollment who stayed in the same school throughout the school year—of 96% (Rhode Island Department of Education, 2015).

**Recruitment and Access**

Recruitment letters were sent via email to current seniors who were 18-years old at the end of their senior year at Bayside High School, and emails were sent to the parents of recent graduates asking them to forward recruitment letters to their children at their current email addresses. The letters described the research study and asked if recipients would be interested in participating in a focus group discussion regarding their senior project experience and the value they place upon the experience given their pursuits after high school.

The researcher described to potential participants that the focus group sessions would last approximately one hour and occur at a time convenient for them to allow for the greatest potential number of participants.
Data Collection

Data collection consisted of seven focus groups and two telephone interviews. The researcher also reviewed the website, handbook, and other documents related to the Bayside High School senior project. Given the purpose of the study, this combination proved effective in answering the research questions.

Focus groups were appropriate for this particular study because the researcher desired to explore how small groups of participants would interact and share their thoughts and beliefs about their senior project experiences and how they valued it. In this way, the researcher sought to “[explicitly] use group interaction to produce data and insights that would be less accessible without the interaction of a group” (Morgan, 1997, p. 2). Gathering participants with like experiences enabled them to talk to and interact with one another: “asking questions, exchanging anecdotes and commenting on each other’s experiences and points of view” (Kitzinger, 1995, p. 299). The researcher planned to conduct individual interviews only if an interested graduate could not attend a focus group session, either in person or online, due to distance or technical difficulties. In this way, interviews served as a back-up to the focus groups.

For the focus groups, the researcher asked participants to sign an informed consent form. (In the case of the online focus groups and the two personal interviews, these forms were sent to participants who completed them and returned them to the researcher via email prior to the discussions.) The consent form pointed out the following: a participant’s right to withdraw at any point, the purpose of the study and the research procedures being used, the criteria for participation, the protection of a participant’s confidentiality, the risks and benefits of participation, the anticipated time commitment, and how to contact the researcher with questions or to respond to the invitation (Creswell, 2007). Recent graduates who participated in a focus
group or interview received a Starbucks or Dunkin’ Donuts gift card (their choice) and, in the case of those who participated in focus group, had the opportunity to interact with and share their experiences with their peers. All participants contributed to research on a topic directly related to their own educational experience and that of the next generation of high school seniors who follow in their footsteps.

The setting for five of the focus groups was a conference room at Bayside High School, the same school from which participants graduated; thus, this setting was familiar to and, hopefully, comfortable for participants (Morgan, 1997). Two online focus groups were conducted in Google Hangouts with live audio and visual feeds from all participants and the researcher.

Focus group discussions proved advantageous for the researcher given that participants will all have had a similar experience—i.e., successful completion of a senior project—and their interaction with one another yielded new information unable to be obtained in a one-on-one interview format (Creswell, 2007). Kitzinger (1995) found this method of data collection works best “when the interviewer has a series of open-ended questions and wishes to encourage research participants to explore the issues of importance to them, in their own vocabulary, generating their own questions and pursuing their own priorities . . . [working] alongside the researcher, taking the research in new and often unexpected directions” (p. 299). For this reason, personal interviews were only used to collect data when a participant was unable to attend one of the scheduled focus group discussions either in person or electronically.

Information from the focus groups and individual interviews was captured using a digital voice recorder and was transcribed to allow the researcher to code the content.
Data Storage

Focus group audio files and transcripts are stored on the researcher’s personal home computer, which is password protected to ensure that others cannot access the data. Pseudonyms were used to discuss all participants, and nobody other than the researcher has access to the material, apart from the professional archivist who was hired to transcribe the audio recordings.

Data Analysis

Initially, the focus group data was coded using attribute coding for classification purposes, and eventually themes (Saldana, 2009). Coding allowed the researcher to reduce the data to “a small, manageable set of themes” (Creswell, 2007, p. 153) and begin to identify central themes related to the extent to which students found benefits—i.e., deeper learning (cognitive, interpersonal, and intrapersonal) skills—from their senior project experience. The data collected through focus groups and interviews was analyzed using a blend of coding methods including in vivo during first cycle coding and axial and pattern methods during second cycle coding (Saldana, 2009). Saldana (2009) asserts that “coding is not just labeling, it is linking” (p. 8), and the researcher sought to code the data so as to reveal possible relationships between the theoretical frameworks and student perceptions of the lasting value of their senior project experience.

During first cycle coding, the data was coded in order to frame the experience of the senior project and life during and after high school in the words of the recent graduates themselves (Saldana, 2009). In vivo coding methods were used to capture graduates’ own language in discussing their senior project experiences as perceived by them; their words allowed the researcher to better understand their feelings, attitudes and beliefs regarding the
value they placed on this experience. As such, this data informed the research questions by recording the student perceptions of their experiences during and after senior project.

During second cycle coding, the researcher employed axial and pattern coding to identify central categories and themes in response to each research question (Saldana, 2009). In this phase, the researcher looked for themes relevant to authentic, self-directed, deeper learning that may indicate the effective and lasting learning experiences with which the senior project provided these graduates. In this way, this study attempted to understand the value of these experiences for participants so as to replicate or improve upon them for future classes both in the researcher’s own high school and at other schools.

**Trustworthiness**

This study focused on various students’ experience of senior project and how each one valued that experience from the perspective of a recent graduate, one month to one, two, three or four years removed from Bayside High School. As a result, the limitations of the study relate to individual perceptions of the value of this experience relevant to each student and his or her own unique cognitive, interpersonal, and/or intrapersonal skills. In an effort to ensure that the conclusions drawn from this study are trustworthy, the researcher used controls such as consistent formatting of the interview and review methodologies and consistent coding practices to ensure consistency of results (Creswell, 2007; Saldana, 2009). The study is limited to the populations of one high school and its senior project, which limits the external validity of the results, although senior projects generally share similar requirements and characteristics designed to provide students with opportunities for authentic, self-directed learning. As such, the researcher hopes that the results from this study inform curricular, instructional, and assessment practices at Bayside High School surrounding senior project to add more lasting value to the
experience which every student who hopes to graduate must undertake and complete successfully. Additionally, other high schools with senior projects may benefit from this study and choose to modify, improve or otherwise change their programs based on its findings. Finally, the researcher hopes those schools that do not currently offer a senior project or similar extended, project-based learning experience for students will consider doing so.

**Protection of Human Subjects**

The researcher adhered to the Northeastern University Institutional Review Board requirements in the protection of the participants engaged in the study. The researcher reminded potential participants that their involvement in the study was voluntary and that they may opt out at any time. Also, he carefully reviewed, in writing and orally, the purpose, scope and potential risks and benefits of the study during the informed consent process and prior to the focus group interviews.

No students under 18-years of age participated in the study and all participants were protected through signed, informed assent from each individual. In addition, the researcher did not conduct any intervention on the participants, but merely engaged in dialog to understand their experiences and perceptions. As such, “[t]he procedure present[ed] experiences to subjects that are reasonably commensurate with those encountered in their actual or expected medical, dental, psychological, social, or educational situations” (National Institutes of Health, 2016, n.p.).

Finally, as the researcher does not serve as a teacher and/or evaluator for any of the participants —i.e., all the participants had graduated from Bayside High School at the time of the focus group sessions—the risks to them were minimal. Also, he provided further protection to participants with pseudonyms and confidential collection, storage, analysis and reporting of data.
Chapter IV: Research Findings

The purpose of this study was to identify and describe what recent high school graduates of Bayside High School perceive they gained from their successful completion of a senior project and how these gains may be or were of value to them in their lives after high school. Also, the researcher sought to understand how the authentic, self-directed elements of the project contributed to participants’ deeper learning, and how the project might be redesigned in the future to better serve future students’ experience with the project and the learning they take with them from it. Authentic learning theory (Harrington & Oliver, 2000) and self-directed learning theory (Gibbons, 2002) as they contribute to the principles of deeper learning (Martinez & McGrath, 2014; National Research Council, 2014) guided the study. Thus, the research questions for this study asked:

1. What do recent high school graduates perceive they have gained from their participation in the senior project and how do they perceive these gains as of value to them, while in school and in their lives after high school?
2. How did elements of the senior project in keeping with authentic and self-directed learning contribute to students’ engagement and learning in the project?
3. Given the desired outcomes of the project as put forth by the school, how do recent high school graduates believe senior project could be redesigned to have a greater impact on students’ experience and learning during and after high school?

This chapter summarizes the demographics of the participants of the focus groups, examines the perceptions of 27 recent graduates from the last five classes to graduate from Bayside High—i.e., members of the Class of 2013 to the Class of 2017—reveals the data collected, and outlines the themes that emerged.
Summary of Study Site, Participants, Focus Groups and Data Collected

The participants for this study were students who graduated from Bayside High School, successfully completing the senior project and their coursework, from the Classes of 2013, 2014, 2015, 2016, and 2017. The high school is a high-socioeconomic, high-performance school with approximately 1,100 students in one building. The high school includes students in grades nine through twelve. In 2016, it was awarded the National Blue Ribbon Schools Award as an Exemplary High Performing School. Bayside first piloted the senior project in 1998 and, in 2004, the project became a graduation requirement. The participants of the focus groups were selected based on their experience of having successfully completed senior project over the last five years and that they were at least 18 years of age at the time of the study in June, 2017. The school’s technology coordinator, with the permission of the superintendent of schools, supported the solicitation of participants providing the age and school email addresses of the members of the Class of 2017 and the email addresses for parents/contacts for the members of the Classes of 2013-2016. The researcher provided all participants with letters of introduction and Institutional Review Board consent documents either in person or electronically for their review and signature.

The focus groups were invited to volunteer as they represented the population of the school and the district. All participants successfully completed the senior project and graduated from Bayside High School, each having spent four years at the school and many having attended school in the district since kindergarten as the district sees little student mobility. Although invited, fewer than 45% of the study participants were male which is somewhat lower than the 52% demographic reported in U.S. News “Best High Schools Rankings” in 2017 for Bayside High School. Table 4.1 outlines participants’ pseudonyms, gender, year of graduation and
project topic:

Table 4.1

*Graduate’s Name, Gender, Year of Graduation, and Senior Project Topic*

<table>
<thead>
<tr>
<th>Graduate</th>
<th>Gender</th>
<th>YOG</th>
<th>Senior Project Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andrea</td>
<td>Female</td>
<td>2017</td>
<td>Beekeeping</td>
</tr>
<tr>
<td>Evan</td>
<td>Male</td>
<td>2017</td>
<td>3-D printing</td>
</tr>
<tr>
<td>Hilda</td>
<td>Female</td>
<td>2017</td>
<td>Choreography</td>
</tr>
<tr>
<td>Hillary</td>
<td>Female</td>
<td>2017</td>
<td>Painting-psychology</td>
</tr>
<tr>
<td>Jake</td>
<td>Male</td>
<td>2017</td>
<td>Video games-psychology</td>
</tr>
<tr>
<td>Linda</td>
<td>Female</td>
<td>2017</td>
<td>High school advisory program</td>
</tr>
<tr>
<td>Louise</td>
<td>Female</td>
<td>2017</td>
<td>Jazz music composition</td>
</tr>
<tr>
<td>Beth</td>
<td>Female</td>
<td>2016</td>
<td>International children’s education</td>
</tr>
<tr>
<td>Daisy</td>
<td>Female</td>
<td>2016</td>
<td>E-cigarettes/cardiology</td>
</tr>
<tr>
<td>Joseph</td>
<td>Male</td>
<td>2016</td>
<td>Theater directing</td>
</tr>
<tr>
<td>Matthew</td>
<td>Male</td>
<td>2016</td>
<td>Carpentry</td>
</tr>
<tr>
<td>Thomas</td>
<td>Female</td>
<td>2016</td>
<td>Civic literacy</td>
</tr>
<tr>
<td>Louise</td>
<td>Female</td>
<td>2015</td>
<td>Student representative to school committee</td>
</tr>
<tr>
<td>Samuel</td>
<td>Male</td>
<td>2015</td>
<td>Law-debate</td>
</tr>
<tr>
<td>Steve</td>
<td>Male</td>
<td>2015</td>
<td>Saltwater fly fishing</td>
</tr>
<tr>
<td>Bonny</td>
<td>Female</td>
<td>2014</td>
<td>Veterans war memorial</td>
</tr>
<tr>
<td>Lilly</td>
<td>Female</td>
<td>2014</td>
<td>Young adult literature</td>
</tr>
<tr>
<td>Mary</td>
<td>Female</td>
<td>2014</td>
<td>Surfing</td>
</tr>
<tr>
<td>Anastasia</td>
<td>Female</td>
<td>2014</td>
<td>Locavore movement</td>
</tr>
<tr>
<td>Suzanne</td>
<td>Female</td>
<td>2014</td>
<td>Audio engineering</td>
</tr>
</tbody>
</table>
The researcher held a series of seven focus groups both in person and via Google Hangouts. Due to availability and technical difficulties, the researcher also conducted two telephone interviews. The groups included three to four recent graduates and were mixed from members of the Classes of 2013-2017 based on their availability. Participants in the focus groups were asked a series of questions related to the research questions outlined above.

At these focus groups, the researcher asked questions related to the graduates senior project experiences, how they may have benefited from this experience, how and why they valued these gains, what about their experience served or would serve them well in the future, did they ever feel as though they were in control of their own learning experience, did they ever feel they were learning in the real world, and what were their suggestions for improving the project. After the focus groups, the researcher used a professional archivist to transcribe the digitally recorded conversations. The researcher shared the transcripts of their focus group or interview with each participant and provided them with an opportunity to correct any discrepancies. The researcher reviewed and cross-referenced the transcripts to analyze the data for emerging themes and patterns, using a multiple-step coding process. The researcher first used in vivo coding followed by categorization and theme development.
In addition to collecting data from the focus groups, the researcher also reviewed school and district documents relative to the senior project. These documents included the high school’s senior project student handbooks, senior project website, and other relevant documents. The researcher used these supporting documents to support the focus group interview data given the year of graduation of each participant relevant to the evolution of the project itself.

In the following section, the researcher presents the overarching themes resulting from the focus groups, interviews and document review. The researcher used data from each focus group to understand the research questions presented.

**Research Question One: What do recent high school graduates perceive they have gained from their participation in the senior project and how do they perceive these gains as of value to them, while in school and in their lives after high school?**

During the focus group discussions and interviews, seven important themes emerged relative to what graduates feel they gained from completing their senior project and how they value these perceived benefits. The themes that emerged are presented in Table 4.2. At the time of the study, all of the participants in the focus groups had graduated from, were attending or planned on attending a two- or four-year college. Although the first six themes intersect participants from all five graduating classes, the final theme reflects only the experiences of the 20 participants who are members of the Classes of 2013-2016.
Graduates value the opportunity to select and explore a topic about which they are passionate or in which they are interested. Most Bayside High School graduates spoke positively regarding the opportunities the senior project afforded them to select and explore a topic that was of genuine interest to them. Many participants said the project allowed them to explore a topic which they knew or thought they were interested in studying further and learning more about at college. Other graduates said if it were not for the project, they may not have had the opportunity or taken the time to explore their topic. Several participants used the word “passion” or “passionate” to describe their level of interest in their topic. And a few graduates said they took the project as an opportunity to do something “silly” or “random” that they ended up enjoying and have continued to pursue in their lives after high school.
Choice. Most graduates expressed their pleasure with being able to choose their own topic and expressed an understanding that this aspect of the project was what made it noteworthy. When discussing this element of the project almost all of the participants focused on their fieldwork. One graduate who learned photography while working with a professional photographer for his fieldwork explained, “So it can either be something you get more involved in that you're passionate about, or even an activity that you are thinking about getting involved in, but it pushes you to focus on it a little more. So I think, regardless of whether it was something that I was passionate about and wanted to take as a career or just was interested in, it got me out to do that.” Similarly, another recent graduate who helped choreograph a school musical for her fieldwork said, “I chose my project because I really like theater and I also feel that in high school, a lot of times the arts gets cut from different schools and things like that, so I wanted to show how important it really is and can benefit students.” This idea of having genuine, personal interest in a topic and being able to explore it in a meaningful was also reflected in the words of a graduate who worked with a cardiologist studying the health risks of e-cigarettes: “I think, personally, the opportunity to choose any topic you want was really exciting . . . The opportunity to really get hands-on experience in a field that you’re interested in, that was a really great takeaway for me. I think just getting the firsthand experience, seeing what it’s like in a clinical setting, in a hospital setting was important for me.” This young woman’s sentiments were reflective of those expressed by most of the study participants with respect to this general theme.

Still, other graduates said if it were not for the project, they may not have had the opportunity or taken the time to explore their topic. One participant who always wanted to learn how to play the pipe organ in her church said that if it were not for senior project, she would not
have been able explore this interest: “Because I mean, it took a lot of time and we practiced several times a week, and then just having to do that on your own is kind of hard. If I didn’t do it with my senior project, I would have had to pay a teacher, so that would have been really expensive. Yeah, so otherwise I would have never been able to do that.” Although graduates like this young woman did not go on to study or specialize in the field or area of interest they explored via their senior projects, they still said they benefited from the chance the project gave them and valued it.

**Personal Interest.** More specifically, many graduates cited the value of the benefit of being able to explore a particular field that was of interest to them prior to leaving high school and going off to college. One graduate who learned to play the mandolin and studied protest music said the opportunity to make important choices in high school was valuable to him:

> It’s good to have some individual exploration at the end of high school because college is so much about deciding how you want to continue your studies. And it’s very individualized in that way, whereas high school is more structured. So getting that taste of taking what you’ve learned and turning it into something that interests you. I think it’s a good experience in that way.

This idea of “taking what you’ve learned and turning it into something that interests you” before leaving high school was also reflected in the experiences of other participants. A graduate who helped teach civic literacy classes for immigrants seeking U.S. citizenship said the project “was a great jumping off point for me to get involved in something completely new, because I knew that it was something I was interested in and might want to get involved with, and the senior project was kind of my excuse to go do that.” Today, this young man is still teaching civic literacy classes for immigrants in the city near where his college is located. He said, “The senior project
and my fieldwork kind of got my foot in the door with one organization, which led me to some others and that’s a big part of my life now.”

**Future relevance.** Other graduates knew exactly what they wanted to explore in college and valued the opportunity the project gave them to start their exploration of it early. One participant, who knew she wanted to pursue a career in physical therapy, worked with a physical therapist but was also interested in helping to design and bring a war memorial at a local veterans home. She was surprised at the career connections she found there:

I didn’t realize how I could apply it to what I want to do with the rest of my life. It was cool that I got to have that experience, because I got to think about how physical therapy can come into war memorial. And you wouldn’t think those two things would come together, but the fact that I got to be able to see these veterans going through physical therapy, or talk to them about their physical therapy, and even talk about themselves and how they advance and how they progress, and how adaptations need to be made for certain people, because there is no “cure” and how some people will be bound to a wheelchair for the rest of their life. That type of thing and making adaptations was definitely a cool experience on how to collide things that I’m passionate about, and that I got to benefit from that.

This young woman will graduate from college this spring as a registered physical therapist and still values the opportunities, expected and unexpected, the senior project afforded her. Another recent graduate, who sought to “collide” his interest in video games with his interest in psychology, worked with a psychologist studying the psychology of video games and video game design. Having just graduated from Bayside High School, he said, “I am going to college to learn game design, and that has always been a little kind of specific piece that’s been really
The interesting part of senior project, I guess, is what sticks.” Sometimes what “stuck” for other participants was that they discovered that they did not enjoy or were not really interested in a particular field. The graduate who worked with a cardiologist in a hospital setting learned she really did not like working in a hospital. Another graduate who worked in a beauty salon for her fieldwork, thinking that she wanted to pursue this as a career path, is now an English major at a four-year college. Both participants said they valued the knowledge and insights they gained from their experiences even though it was “negative.”

**Personal passion.** For some participants, this opportunity meant something more. When they spoke about their projects—again, mainly focusing on their fieldwork experiences but not exclusively—they spoke from the heart. Whether it was a recent graduate who is “passionate about the environment” and who worked with a beekeeper for her fieldwork or a young man whose “passion for theater” led him to direct a play at the Bayside Middle School, several participants expressed the fact that the senior project allowed them to further explore or pursue a topic about which they cared about or felt deeply. One graduate who took the project as an opportunity to explore his passion for fishing, worked with a saltwater fly fishing guide. Ultimately, he found that being able to share his passion about the topic, through talking with other seniors and his final public presentation, was important to him:

The thing I value the most from senior project is the fact that, well, the project as a whole sort of gave me a platform to share with other students and other people, sort of this hobby and passion that I have, that I never really talked about much. But senior project, like with the presentation and the creation of a paper and just the fact that, you know, everyone’s doing a senior project and everyone’s talking about their senior project with other people, sort of gave me a platform to, in the presentation, sort of formally present
my findings and things that I found through my fieldwork. It sort of allowed me to open up and explain more about like fly-fishing to people, like my friends, who I just thought would be like, “Oh, they’re not interested in hearing about it.”

This graduate and other graduates like him seem to have gained something unique from the opportunity with which the project provided them, perhaps valuing their experience more deeply than other participants who did not pursue a personal passion.

**Something different.** Finally, a few participants valued the opportunity with which the senior project provided them to do something completely different: surfing and belly dancing. “I really didn’t take it as something, like, serious or something that I was going to use in the future to pursue any career goals that I had,” said a graduate who decided to learn how to surf for her fieldwork. Instead, this young woman took her senior project as an opportunity to escape from the rigors of her senior year in high school:

I think by the time I was in my senior year at BHS, I was a little burnt out. I had been working really hard on the SAT and applying to colleges, and I really just wanted to do something just for me, that I had never done before. I think I looked to the senior project as a way to do that. I don’t think the senior project was invented for having fun, or doing something silly like that, I think it was definitely intended for the career path, but that’s just not really what I ended up doing.

For her, waiting on her surf board for waves to form off Narragansett Beach was a respite and she embraced it: “It gave me something to look forward to every week. I put a lot of pressure on myself during that fall of senior year, so it was just kind of a little escape for me.” The same was true for a graduate who learned how to belly dance; her senior project topic selection story is similar: “All I did was eat, sleep, and breathe academics for the fall semester of my senior year in
high school . . . I just wanted to do something totally random . . . So for me, it was like once a week I get to go and do the bunch of old ladies who are not wearing shirts and moving their belly. It was like so out of my comfort zone. And it was really fun.” Both young women are still surfing and belly dancing, when they can find the time, as they enter their senior years at four-year colleges; indeed, one is a member of her school’s belly dancing team.

**Graduates value the writing, public speaking and organizational skills they gained, believing these skills will or have served them well in college and/or the future.** Most Bayside High School graduates pointed to the research paper and the final presentation as being of value to them with respect to the writing, public speaking, and organizational skills they gained from these components of the senior project. The most recent graduates, members of the Class of 2017, spoke about how they believed these skills will help them when they begin their college studies in the fall, and those participants who were already in college (Classes of 2014-2016) or who had just graduated from college (Class of 2013) spoke from their actual experience. Still, all these participants pointed to their senior project papers and final presentations as the primary sources for these benefits; however, a few graduates highlighted their fieldwork experience as contributing to the development of important communication and organizational skills.

**Communication skills.** The most recent graduates pointed to both their research papers and final Senior Boards presentation when explaining their perceived value for the next step in their education. The young woman who helped choreograph a high school musical said, “I think more when I go to college in the fall I’ll be able to use more of what I learned, with presentations and writing longer papers. I think that’ll like be able to help me a lot. I haven’t experienced that, but I think it will.” Another recent graduate pointed to both the paper and presentation as well,
but was more specific with respect to how she believed they would help her in college; it was the process of organizing information and breaking down a large task into smaller, more manageable ones that she valued the most:

Getting lots of different sides and integrating them into your paper smoothly and also being able to write something like a ten-page paper on bees and the threats to them, I thought that helped a lot, just so in college we're more prepared to write . . . I think it helped me kind of organize my thoughts a lot, just for college. I’m prepared to write a lot, and gather lots of information where you're going to have to pile it into a paper and be like, "Okay, how am I going to sort this out? How do I organize all my points and address what I want to accomplish in writing this paper?"

Participants from the Classes of 2013-2016 echoed these sentiments based on their own actual college experience.

Older graduates pointed to their papers and presentations as being beneficial to them as developing writers, public speakers and organizers of information. One member of the Class of 2013 said she was surprised when she arrived at college and found herself in a unique position: “Even just freshman year of college, not many of my peers had really ever done like a senior project in their school, so they were like, ‘Oh, I’ve never written like, like anything longer than like a six-page paper. I’ve never done a presentation that was longer than like five minutes.’” She said this experience gave her confidence with the papers she wrote and the presentations she delivered in college, even though as a college graduate she said: “I still don’t think I’m like the best presenter, but I mean, it all takes practice, right? So, just having that in senior year was nice, too.” Another member of the Class of 2013 highlighted a similar experience after he graduated from Bayside High School: “What I found going to college was that I was better-prepared to
write a research paper than a lot of my peers. Now, I don’t know if I can chalk that up to senior project in particular, or the four years at [Bayside] in general, but I felt like I was really proud of my essay, and that for the first time, the organizational aspect, which had always been kind of my weak point in writing academic papers, came together.” A member of the Class of 2014 found her presentation experience to be more valuable than writing her paper because it presented her with a unique situation she had not encountered elsewhere in her high school experience but which she has since encountered as a rising junior in college: “The most valuable part of senior project for me was, hands down, presenting it at the end . . . We’ve written papers before. What we haven’t really done was had to put together a presentation and sit in front of a bunch of adults and tell them, ‘This is what I did.’ And put your name on it.” Also like their younger counterparts, many participants who are in college or who had just graduated pointed to the organizational skills the project instilled in them.

Organizational skills. The organizational skills these graduates say they gained from researching and writing the paper and preparing the public presentation not only helped them in their academic pursuits but in their lives after high school in general. One rising college freshman said he came to a point with his senior project where he had to figure it out himself:

Going through paperwork and going through steps and planning out, you know, senior project is nice in that it’s more or less planned out in steps and stages. But you’ll come to a point where you do have to face a project and you have to sort of learn, figure out how to make it work. Like I’ve been coming to this a lot of times when I had big projects at college. I can take some of those skills and say, “Okay . . .” It taught me how to sort of break up a large project into stages and accomplish a goal . . . then that kind of gives you a template for things that you might encounter later in life.
After three years of college, another participant related to these sentiments but pointed more specifically to how her senior project research and organizational skills helped her in her chosen field of study:

Even the concept of research and having your own independent research project is important. I mean, for me, I study social sciences. So it’s literally every semester and pretty much every single class: the final project is a 20- to 40-page research paper. And it’s all pretty much independent. You have maybe a couple deadlines throughout the semester, but it’s very much you were on your own doing research.

While most participants who said they gained writing, public speaking and/or organizational skills through the work and research they did on their papers and presentations, a few graduates said they derived important communication and organizational benefits from their fieldwork experience.

**Speaking with adults.** Communicating with other people, especially adults, or having to organize a large group of individuals to achieve a goal emerged as two valuable benefits for two participants when they talked about their senior project fieldwork. A rising college sophomore said his experience finding a mentor and, ultimately, working with a professional saltwater fly-fishing guide has benefitted him when communicating with others in important situations since his graduation from Bayside:

I think a skill that I sort of brought with me from senior project was a confidence and communicating with people. Because even from the start, like having to find a mentor, it can be a little be nerve-wracking. I know for me, the mentor I ended up with was maybe the fifth person I called and I asked if they could be my mentor. And once you do find a mentor, you know, it’s somebody you’ve never met before and you just sort of have to try
to – you know, form this connection that, because that’s what going to help make the experience meaningful. So I think it’s really helped me. I’ve done a lot of interviews and I’ve called a lot of places and applied to a lot of internships, and I think through that confidence and being able to, you know, put yourself out there and not wonder like, “Am I qualified enough? Am I right for this position? Am I going to bomb this interview?” I think has really helped me in terms of, yeah, just sort of being fearless.

The interpersonal communication skills he was challenged to develop during his senior project have even helped him in his chosen field of study: education; he said, “So, I guess, that’s sort of another reason I chose to do guiding, because it is more or less sort of like teaching [with the] interaction between two people.” Similarly but different, another participant, now a rising college junior, who organized a young adult literature conference for her fieldwork, said the communication and management of other young people and adults was a developing skill she took away from her senior project: “It really taught me a lot about how to manage people. Because I was organizing this event, and I had people doing jobs for me, or doing tasks for me, and just learning how to organize all of that was really, really helpful. Not just as kind of an interpersonal skill, but also in leadership roles. I think that taking charge of something really helps you learn how to be a leader.” The increased self-confidence evident in both of these insights also was present in many other participants’ responses to the research question.

**Graduates value the self-confidence and pride they derived from their experiences.**

Many Bayside High School graduates cited increased confidence and pride in themselves from what they accomplished in their senior projects as a benefit they valued. Those participants who felt more confident as a result of their projects most often said they derived this feeling from their interaction with adults or their demonstrated ability to complete a project of such length and
complexity. Among those graduates who felt pride upon completion of their project, most said they did so out of their own sense of personal accomplishment and/or what they were able to help others accomplish.

One recent graduate’s story of her fieldwork experience illustrates both of these elements especially well. This member of the Class of 2017 helped choreograph the musical *Guys And Dolls* at Bayside High School during the fall of her senior year. Her mentor, an English teacher and trained dancer who was the primary choreographer for the show, took the approach of leaving her alone to work on the dance numbers under her direction, providing feedback and guidance only after she had a scene up on its feet. Reflecting on this teaching method, the young woman found it effective, especially with respect to the self-confidence it instilled in her:

Yeah, I definitely learned a lot from it because when someone else is there as a leader also, like say [my mentor] was there with me, you kind of tend to rely on someone who’s older or who has more experience than you. But by being alone, I didn’t second-guess myself as much. I still did, but not as much as I would have, if I was not alone . . . That was very nerve-wracking for me, but also [laughs] I had to trust myself that I knew what I was doing. Up to that point, I had learned enough from her through being in [the school’s theater club] for the past three years. I had learned enough to be able to do it on my own by then.

She remembered one particular number, “Take Back Your Mink,” when she felt her confidence in her own abilities as a choreographer surge: “When I finally got them to listen to me [laughter] and you could see that they were all paying attention to me and asking me questions and things like that, it really made me feel like, ‘Oh, they’re actually listening to me. I’m like the leader here.’ Yeah.” This experience along with a successful run of final productions inspired a feeling
of pride in her both for her dancers and herself: “I think what I valued most was getting to work with other students in the high school and really seeing them grow, seeing them learn and then, ultimately, performing it on the stage and seeing all their hard work and my hard work come together. It really paid off, and it made me really proud of them and proud of myself, at the same time.”

Similar stories of a participant’s pride in his or her achievements include: the apprentice beekeeper who was able to open a hive and extract honey after watching her mentor do it multiple times (“I was able to do it on my own. I thought that was very cool.”); the assistant civic literacy instructor who took on meaningful roles in the classroom, collaborating with his adult counterparts (“I felt like I was taking charge of my own experience with the fieldwork and being treated as an adult and an equal by others in the organization.”); the graduate who worked with an international children’s education organization who took pride in her ability to ask questions of the adults with whom she was working and converse with them (“I was proud of myself for asking those questions, and I felt like I had real information to share with my peers and myself.”); or the participant who took confidence from the fact that she completed an extended project of her own design, something she knows she’ll have to do several more times during her undergraduate career (“I'll have to do this three times in my next two years of college, since I have to complete two junior papers and one senior thesis. Even though these papers are going to be much longer, I think that the skills I developed during the senior project will give me extra confidence for the project process in general.”). These examples all reflect how many participants felt about specific elements of their fieldwork and/or their ability to successfully complete a research paper or presentation that was meaningful to them. As the graduate who worked with a professional photographer for his senior project said, “I just felt that when I
walked away from giving that presentation, I felt really good about myself, and I felt like I accomplished something really, really good.”

**Graduates value the opportunity to work closely with an adult in a professional manner and the relationships they formed.** As seen previously, working successfully with an adult mentor often contributed to many Bayside High School graduates feeling increased self-confidence and personal pride. Additionally, almost half of study participants noted that this experience of working closely with adults in a professional setting and the relationships they formed was a benefit they received from the project that they valued greatly, especially with respect to their future interactions with adults in professional or academic settings. A recent graduate who worked with the two faculty advisors of the high school’s advisory program found that her ability both to interact with these adults in both formal and informal settings and to work together with them to improve the program was very important for her: “You know, you can bring something to the table in this sense and that, even just communicating with them and sort of speaking up and asking questions and understanding how that relationship works, I think that was probably be one of the biggest things I take away from my project.” Another recent graduate who worked closely with her trumpet teacher to compose a musical piece for the school’s jazz band said the experience of working with her mentor in a different context changed her relationship with him in a positive way. Similarly, the young man working with a psychologist on the psychology of video games reported with enthusiasm that his mentor, a family friend, “has been telling people that he was learning more from me than I was from him.” These participants all found that their close work with adults in a focused, professional setting changed their relationships with these individuals for the better.
For graduates now in college, the relationships they built with adults through their senior project fieldwork often led to easier, more professional (and meaningful) engagement with adults in their lives after high school. The rising college junior and aspiring physical therapist who worked with older individuals in a local war veterans home said her interactions with these people provided her with an effective means of engaging with other adults in other settings:

Just being able to sit and listen to someone and having them tell their story, and people will tell you just about anything if you listen. I think that’s probably the coolest thing that I learned. I got to hear so many different stories from so many different people, and I think that I took that skill to college, and will probably into my future: that if you just listen, people will tell you just about anything.

Other participants found that engaging with adults in a professional manner—e.g., sending emails, dressing professionally, addressing someone formally—was a valuable skill and experience they took with them from their projects. One graduate who served as the student representative to the local school committee for her senior project said the “professionalism” she gained through presenting herself and speaking to adults was a real benefit when she got to college: “Interacting so much with the adults on the school committee and at [Bayside] High School helped me when I got to college where I was expected to talk much more with my professors, advisors and others than in high school.”

Graduates value the opportunity to learn and explore outside of the normal school environment. Several graduates cited that they valued the opportunity “to get out” of Bayside High School that their projects afforded them. One participant who directed a middle school theater production defined the phrase as follows: “It means leaving the school environment and actually participating, and taking part, and trying to take a step forward in whatever your project
Some graduates benefitted from the process of “getting out and finding a mentor” like the young woman who worked with and learned from a beekeeper in the field. “Just navigating it on your own is helpful,” she said, “because, in life, you're going to have to do stuff on your own. It's a good kind of helpful thing to do before you have to do it on your own.” Others, like the recent college graduate who worked to finance and fundraise a local mission trip to Washington, D.C., said just the experience of leaving the “[Bayside] bubble” was valuable to him:

I got to see different people, different cultures, different experiences that other people as privileged, I should say, could have had. You get to learn from different experiences. I went to D.C. So, we spent a night outside with the homeless and, literally, just spoke to them and realized they’re completely normal human beings and that a lot of the stereotypes we get of homeless people are just from the media and just wildly out of control and don’t make sense of who they really are.

This young man concluded with the assertion that “[g]etting out of your comfort zone is a great way to learn.” The self-directed, authentic learning aspects of participants’ experiences with the senior project are explored further with the findings for Research Question Two.

Graduates value the time to reflect on themselves and their own learning and personal growth. Several Bayside High School graduates said they benefited from the opportunity to stop and consider themselves as developing learners and individuals as a result of both the research and fieldwork components of the senior project. From a research perspective, participants said their papers gave them a chance to think more deeply about certain aspects of their fieldwork that were of interest to them. The recent graduate who worked to improve the school’s advisory program found herself considering “the importance of interpersonal student-teacher relationships and how that impacts a student’s education and their success.” Her research
caused her to expand her views beyond her own personal experience: “Every time I found a new piece of research and a new theory that a lot of teachers used in order to connect with their students or a new impact it had, it made me reflect a lot on my education.” Other participants explored their own learning from a more theoretical level, like the recent college graduate who worked with a local journalist to write publish and distribute his own news magazine written in the gonzo journalism style, the focus of his research:

You know, in journalism, everything revolves around what is truth, right? Like, are you being ethical? And I didn’t really understand—I think it’s, you know, something that we all think we understand very well, and then you start to do some research into the philosophy behind it, and it’s actually very complicated. And it’s still something I’m not fully an expert in, but I was really enjoying it . . . So getting into that part of the field, which I think is super-relevant now, is super-valuable for journalism, is something that stuck with me.”

Still, other participants pointed squarely to their fieldwork to illustrate their growth as individuals, like the young man who managed the budget for the mission trip to Washington, D.C. His experience working with the homeless changed him, he said: “If you remember me [from high school], I was a bit snarky and sarcastic, so working with homeless people was really eye-opening for me. I stereotyped a lot, so it was a good way to overcome personal ignorance.”

Graduates value the future opportunities for which the project prepared them and/or made possible. Finally, several participants, all of whom were currently in or had just graduated from college, said the project either helped them get in to the college of their choice or provided them with opportunities for internships or employment while in college. Those participants who said their project experience helped them get into college focused on how it
helped them build a more diverse “résumé” that they believe helped them distinguish themselves from other applicants. The graduate who worked on a mission trip for his fieldwork, even said he was told this was the case after he was admitted: “I went and asked the guy that I interviewed with there, ‘What was the big reason that they said yes?’ And he said it was my work where I stepped up and got to do service learning trips, so I have to credit [the senior project] with getting me into college.” Other participants said they were awarded internship opportunities in college in fields that were directly related to or an extension of their fieldwork. The young woman who organized a young adult literature conference for her fieldwork attributed her first internship in the publishing industry to her senior project experience:

It gave me a leg up when I was applying for internships the summer before my sophomore year, because I could say, “Look, I actually have relevant experience in the publishing industry” . . . I think that the passion that I showed, and the enthusiasm that I had, as well as the background that I had in the field, which, again, was very slight—it was more of a managerial task than it was a literary one. But it helped me get my first internship, and that’s how you get more internships.

Other participants said their projects started them down career paths, citing the connections they made during their fieldwork that led to future employment: “I never really thought about it as networking when I was doing it,” said the participant who taught civic literacy classes to immigrants seeking citizenship. “It was just kind of looking for more opportunities, but looking back on it now, that was the start of a lot more.”

**Research Question Two: How did elements of the senior project in keeping with authentic and self-directed learning contribute to students’ engagement and learning in the project?**

During the focus group discussions and interviews, graduates identified several elements
of the project they felt engaged them in authentic and/or self-directed learning. Table 4.3 outlines the themes that emerged from these conversations. Similar to the themes derived from responses to Research Question One, the final theme reflects only the experiences of members of the Classes of 2013-2016 as focus groups including members of the Class of 2017 were held one month after their graduation from Bayside High School—i.e., prior to attending college.

Table 4.3

Themes from Recent Graduates in Response to the Second Research Question

Choosing their own topics, determining the focus of their own research papers, selecting their own mentor and designing their own fieldwork allowed students to take control of and direct their own learning.

Fieldwork allowed students to explore personal or career interests and “learn through doing” in authentic, hands-on settings alongside an experienced mentor.

Fieldwork and the final presentation often resulted in tangible products or authentic performances that were meaningful to students and demonstrated their learning.

Fieldwork and final the presentation caused students to communicate their ideas, experiences and learning in authentic settings.

Allowing students to choose their own topics, determine the focus of their own research paper, work with a mentor and design their own fieldwork caused students to be accountable for their choices and actions.

The mentor selection process, research paper and fieldwork called upon students to solve problems and overcome setbacks.

Researching and writing the paper, engaging in fieldwork, and delivering the final presentation called upon students to acquire and/or demonstrate skills they found useful in the real world.

Choosing their own topics, determining the focus of their own research papers, selecting their own mentor and designing their own fieldwork allowed students to take control of and direct their own learning. Consistent with findings from Research Question
One, where graduates said the project allowed them to select and explore a topic about which they are passionate or in which they are interested, many participants felt various aspects of the project encouraged them to take control of and direct their own learning. As one participant summarized it, “It's on you. It's on the students. You have a year; it's up to you to find a mentor, to schedule your field work, schedule what you've got to do. It's all on you; you've got to do everything. And that's important.”

**Project topic.** The first aspect of the project that allowed for this type of self-directed learning to occur was the fact that students are allowed to choose their own topic for their senior project. Participants agreed that this element was not only a benefit which they valued about the project because it let their own personal interest drive their project from the start. Many graduates said the fact that they could choose their own topic allowed them to explore a field of study or area of interest which they knew or thought they might want to study further in college. Participants said if it were not for this aspect of the project, they may not have had the opportunity or taken the time to explore their topic. Graduates used the words “passion” and “passionate” to illustrate the level of drive and self-direction their projects afforded them. Some participants even said the fact that the focus of their project was left up to them made them feel as though they could choose something different and out-of-the-ordinary for them as a sort of break from the crunch that can be senior year, allowing them some unexpected freedom during an otherwise stressful time.

**Paper topic.** Although most participants focused on their fieldwork when discussing the self-directed nature of their senior project, some graduates felt that their choice for their paper topic and the writing process they followed was important in allowing them to take control of their own learning. Some graduates said they chose their paper topic with an eye towards
challenging themselves as writers, giving them a break from the types of papers they feel they had already written throughout high school. One participant who wrote about the legal system said, “I liked being able to write a paper that was more serious, that was more focused on reality, because it was secondary research that was more inquisitive, that had a little bit of a sharper edge than papers that you usually get to write in high school and, of course, that you as the student had more control over.” Another graduate recalled her own research process on international children’s education and how her interest drove her inquiry for her paper:

There are some certain levels or parts of my project where I really felt I was doing something and learning something just because I wanted to learn it . . . At certain points of my research I would just start reading something and then just continue through this and then read something even though I knew it didn’t have to do with my paper and something like that. I feel that happens with any research, especially if you’re interested in it. But that definitely was useful and I feel, after being in college, that happens as well.

In this respect, participants said they enjoyed this element of the paper and other aspects of the project that allowed them to be “self-starters and self-creators” with respect to the topic on which they would spend their time researching and writing.

Traditionally, the project has determined a schedule and prescribed process for writing the research paper; however, some members of the Class of 2017 were selected to participate in a pilot accelerated paper-writing program in which the schedule was more fluid and required fewer steps in the writing process. One participant who was offered this opportunity due to her enrollment in an Advanced Placement English class, elected to take it and found it beneficial to her own learning:
It meant that, like, little things that you wouldn’t normally include in your writing process—like, I don’t really want to just write out my introduction and stop there and wait to get it back. We sort of skipped over stuff that sort of inhibits you from feeling like you’re controlling your own learning. Stuff that sort of brings you back down to the reality of there are deadlines for this, and I’m doing this because my teacher’s telling me to, and I’m going to hand this in, and then I’m going to get 100 on it, because I completed it, and then I’m going to get it back and then I’m going to . . . I think that’s what sort of made it always feel more contrived and artificial.

Fieldwork. Still, by far, graduates spoke of how finding a mentor and developing and completing their own fieldwork project was the element of the project they felt called upon them most to self-direct their own learning. Some participants struggled with having to find and secure their own mentor, but most said they learned from the experience. One graduate said, “It can be a little nerve-wracking. I know for me, the mentor I ended up with was like maybe like the fifth person I called . . . And that was sort of the moment when I was like, “Okay, maybe this wasn’t the best experience it could be, but I know that when things don’t go as planned or as expected, I can still make it work.”” Although some participants said they struggled with finding a mentor, once their fieldwork got underway, they were hooked and felt as though they were in the driver’s seat. One graduate who helped teach civic literacy classes to immigrants recalled his fieldwork, saying, “There were large parts of the classes that I was completely responsible for and my mentor was the other teacher in the class, but I didn’t feel like I was just the volunteer in that class, kind of passing things out or just facilitating, like a teacher assistant might do a lot of the time . . . so I felt like I was taking charge of my own experience.” By its nature, fieldwork is the most self-directed aspect of the senior project; however, participants
said that unless students embrace this element and take advantage of the learning opportunity it represents, they will not reap its benefits. As one graduate said, “I had to reach out and take the initiative.”

**Fieldwork allowed students to explore personal or career interests and “learn through doing” in authentic, hands-on settings alongside an experienced mentor.** Also consistent with findings from Research Question One, where graduates said they valued the opportunity to work closely with an adult in a professional manner and the relationships they formed while learning and exploring outside of the normal school environment, many participants described how their fieldwork allowed them to “learn through doing” while working in a hands-on fashion with an experienced mentor in authentic settings. Graduates reported the learning the most when they were actually “doing” something in the field or area of interest they chose. Whether it was composing an original piece for a jazz band, sitting at a conference table with the members of the school committee, directing or choreographing a student theatrical production, building a 3-D printer, or participating in a belly dancing class, students who actively engaged their fieldwork reported feeling as though they were learning in an authentic manner. One graduate who worked with a beekeeper said, “Just knowing what she taught me by learning through doing it multiple times, like opening up the hive, extracting honey all on my own, I felt was really nice. Just by practicing those skills with her, I was able to do it on my own.”

Another participant, a fishing enthusiast who worked with a saltwater fly-fishing guide, tells this story from his fieldwork, illustrating his authentic experience:

We had just like finished fishing and we come back and he’s like, all right, we’re going to hop in the Jeep and just cruise along the beach and I was like, “Oh, for fun? Like a
joy ride?” He goes, “No, we’re just going to go out and, you know, just see what the water looks like.” And so, we’re driving around. I’m like, “I don’t really see any like baitfish or any fish rise or anything.” He says, “Oh, that’s not what I’m looking for. I’m looking for the color of the water.” I was like—color of the water? He’s like, “Yeah. Because the color of the water can tell you a lot of different things about what’s in the water, what the tide is, what the tide’s going to be tomorrow.” . . . And that’s when I sort of realized: Wow, if you really want to make it in this business, you have to put in all of this work and really have this sort of telepathic relationship with the environment around you, and that’s what it’s really like to be a guide and to really be someone who can almost like talk to the fish.

By the side of his mentor, this graduate learned by “looking at the water” himself and, although he did not emerge from the experience an expert saltwater fly-fishing guide, he did leave his fieldwork knowing that he was able to experience this profession from a unique perspective: from the inside out. Stories like this one reflect those of other participants with respect to their own authentic work experiences in real-world settings with their mentors.

**Fieldwork and the final presentation often resulted in authentic products or performances that were meaningful to students and demonstrated their learning.** Consistent with findings from Research Question One, where graduates said they valued the self-confidence and pride they derived from their projects, participants whose fieldwork resulted in a tangible “takeaway”—e.g., something they created, made happen, or achieved—spoke positively about their experiences and the type of learning that helped them achieve this goal. The participant who helped choreograph a school musical ended her fieldwork not only knowing more about choreography but also how to be a leader: “I think what I valued most was getting to work with
other students in the high school and really seeing them grow, seeing them learn and then, ultimately, performing it on the stage and seeing all their hard work and my hard work come together. It really paid off, and it made me really proud of them and proud of myself, at the same time.” Similarly, another graduate whose fieldwork resulted in a performance, teaching civic literacy to immigrants, said his ability to “create [his] own work” was a good idea for him and for others, too: “Partly because there’s a sense of no one is making me do this. This is my own and they’ll probably put more effort into it and gain more from it if they can take ownership of it and say, this isn’t something that someone else was just completely making me do. This is something that I really want to do, so I’m really going to work hard at this.”

Sometimes fieldwork resulted in an achievement or experience with which, at the time, a student was not quite comfortable, but, in retrospect, its personal meaning and significance became clearer to him or her. This was true for the graduate whose fundraising made possible his church group’s mission trip to work with the homeless in Washington, D.C.:

I had never slept out on the street in my life. I mean, you ignore homeless people. You ignore those people because they’re crazy. But being in the shoes of someone that you usually just choose to ignore is a completely challenging experience. You’re isolating yourself to something that you’re uncomfortable with, but, in the long run, it’s something that’s great and is a very eye-opening and positive experience. You know, even if it was a negative experience, either way it’s an experience that is better for you as a person.

This young man’s fieldwork experience was similar to that of the participant who worked in a beauty salon for her fieldwork; she left the experience with new skills but also some doubts about her future career choice: “I picked that because I thought I wanted to own a salon when I
was in high school. And then going through college, I realized I didn't, so I wound up switching my major. But at the time, it's what I really wanted to do.” And another graduate who enjoyed art and studied a new medium, oil painting, was also pleased by her final realization after completing her new piece—not by what she did, necessarily, but by what she learned about art and artists from her mentor:

Personally, I drew a lot from being able to talk to a local artist, someone who does this as part of his life, and I really enjoyed being able to talk to him about how he incorporated art into his lifestyle. And I liked learning about that, because I don’t necessarily want to be an artist, because that’s not necessarily practical, so talking to someone about how it can be used in the real world was really nice for me.”

For other graduates, their final presentation of their experience and their learning to a panel of teachers and other adults from the community provided them with an opportunity to create products or performances that were meaningful to them and demonstrated their learning. One participant said the graphics she created and decisions she made with respect to how best to tell her story of working with an international children’s education organization made a difference for her:

I really felt like creating the presentation actually—and reflecting on it, and this whole idea of what did you learn—really helped me establish these ideas, and I actually used that as a visual in my presentation, kind of explaining this whole different process about how educational funding gets to girls in a country like Nigeria and how that comes from the government and all the things that need to go on … I made a visual of it and that felt really rewarding because that was something that I really created just because of myself, and no one was, like, “Oh, you should, like, make a visual of that.”
Other graduates reported similar satisfaction with their presentation with respect to the control they had over their message, the evidence they presented to the audience, and the satisfaction they derived from an overall successful experience. As one participant said, “So it felt really good at the very end to walk back into the classroom, be told that I passed, and everyone in there was smiling and genuinely happy that I had gotten through with everything. So I just really appreciated that everyone really wanted you to do well and that what I did worked.”

Fieldwork and the final presentation caused students to communicate their ideas, experiences and learning in authentic settings. Some graduates also said their fieldwork experience and the delivery of their final presentation caused them to have to communicate in new and different ways in a real-world context. Fieldwork most often caused participants to have to communicate effectively with mentors, especially when considering the logistics of bringing two human beings with busy schedules and multiple responsibilities together to work productively. One graduate said finding her mentor was a challenge in both communication and self-motivation for her: “I think it was more, like, getting out and finding a mentor. Just navigating it on your own is helpful, because in life you're going to have to do stuff on your own. It's like a good kind of helpful thing to do before you have to do it on your own.” Another participant said, regarding the designing and execution of his fieldwork, “I think for me, senior project really taught me a lot of sort of practical skills that apply to sort of being an autonomously functioning citizen, like being able to communicate with people and schedule appointments to make time to get your field hours.” Other graduates said their choice of fieldwork forced them to communicate with other individuals in new and different ways for a variety of purposes. One participant said, “[It was] the most challenging choreography number that I had to do for that show and there’s a lot of people that you have to get focused on one
thing and when I finally got them to listen to me [laughter] and you could see that they were all paying attention to me and asking me questions and things like that, it really made me feel like, ‘Oh, they’re actually listening to me. I’m like the leader here.’ Yeah.” Another graduate said her fieldwork brought her into a different relationship with two teachers with whom she was familiar but with whom she had never worked with before and the process of changing a school program at the institutional level:

It was really interesting to sort of go through the process of making this work: one of the three of us [two teachers and the student] would come up with an idea, we would meet and talk about it, and then we would say, “Okay, yes, we’re for sure going to do this!” Like, this is great, everyone’s going to love it. And then, we would bring it to administration, and sort of, right away, there was someone who maybe didn’t think this was great and that everyone wasn’t going to love it.

These communication challenges and the learning that resulted from them carried over to their final presentation for some students.

The presentation is the culminating exercise of the senior project at Bayside High School and it requires students to develop, organize and deliver a practice presentation in front of their peers and a teacher, revise accordingly based on the feedback they receive, and, finally, formally present in front of a panel of faculty and community judges in order to successfully complete the project and satisfy the graduation requirement. The presentation involves all aspects of a student’s project and is meant to press students to articulate their learning stretch and provide evidence for their learning in both the paper and fieldwork components of their project. Graduates said preparing to effectively communicate their own senior project experience and the learning they gained as a result of it was important to them largely since
they realized they would be called upon to speak in similar settings in as part of their college experiences or careers. One participant said “the real world” elements of the presentation as a culminating activity resonated with her into her future:

I think a presentation actually kind of helped with the whole bringing it, or tying it back to the real world. For the presentation, we all had to dress up in a business professional way, we practiced a lot, and I think in high school you don’t really get the presentation practice very much. And I’m starting work in July for the same company I interned for last summer. All the interns had to do a major presentation, and those were a really important part of our internship experience. So, just that kind of practice and just having that mindset and just having that background, I think that early on in my education helped me.

Another graduate said the final presentation made her feel more in control of her own learning and the outcome of her project: “Getting up in front of this group of people from the community, that was when I actually felt like I was in control of what I was learning and doing and saying.” Finally, one participant whose fieldwork involved pursuing a locavore diet with her family for a month said the presentation was the most meaningful and authentic part of his senior project: “I think the most important thing I got out of my senior project experience was just the presentation practice. Learning how to present in front of people is a really valuable skill.”

**Allowing students to choose their own topics, determine the focus of their own research paper, work with a mentor and design their own fieldwork caused students to be accountable for their choices and actions.** Several graduates said they took responsibility for their choices and actions during the senior project, contributing to their authentic, self-directed
learning experience. One participant said the project selection process and the scope of the project itself required her to take a more responsible approach to her senior year, one that she has found beneficial to her in college:

   It’s a lot of responsibility. I think because it’s so open, you kind of get caught with the radical freedom problem, where there’s almost too much to choose from. I think that just being able to focus yourself and focus your interests on a topic that interests you but also on a specific project. And only 15 hours of fieldwork, and only one essay is a really important skill to learn in college, when your options are pretty much infinite, and the structure you had in high school has just all but disappeared.

The research paper caused other graduates to clamp down and take responsibility for their own outcomes. As one participant said with respect to the support services and resources Bayside High School provides to seniors if they struggle with their paper:

   Well, I think it really does fall on the student. With the school providing as many resources as it does, in terms of the help, I guess it might be possible just to kind of use those resources to not have to put in that much work yourself. Still, I found that if you choose to take ownership of it, you really can. And the ways that I felt I did were in my paper. I spent a lot of time trying to find the right sources, to view my fieldwork through a certain lens, so I can interpret my findings and my learning in a particular way.

When it came to working with their mentors, graduates often said they felt they were under increased expectations to be responsible and accountable for their words and actions. One participant, whose mentor was a teacher she respected and with whom she had a previous relationship, said, “I feel like mainly it was just that I told Mrs. [Hill] I was going to do it and it
was going to be ready by May, and then I had to do it. [laughter] So, like, that was just like there was an element of accountability there. I don’t know if it came right from the senior project or if I learned much from the sort of staggered deadlines of the project, but it was a reason to provide myself with that accountability, I think.” Similarly, another student whose mentors were teachers at the school, said, “[It’s] the accountability of saying, ‘Okay, I’ll go home and do this,’ and then getting home and being, like, ‘Mmm-hmm’ . . . But then saying, like, ‘Nope, I was going to do it and these are adults and it’s their job, too. They have other stuff, so it’s going to be done!’ So, forcing yourself to work with people who you know are committed, you’re going to really commit to something yourself.”

The mentor selection process, research paper and fieldwork called upon students to solve problems and overcome setbacks. With accountability and responsibility comes the need to solve problems and overcome setbacks largely on one’s own. Although Bayside High School does provide supports for all seniors via the senior project coordinators, a student’s English teacher, and the school’s Academic Learning Center, problems do arise and must be solved or circumnavigated. Several graduates said that various elements of the project made them feel as though they were taking control of their own learning in authentic ways when it came to overcoming obstacles. One participant framed the project as a whole as a unique challenge for seniors: “Kind of reflecting on high school, I think a lot of the time, they tell you what to do and you do it. But this project, it was giving you freedom, and that's something maybe we're not used to.” With respect to finding an experienced, adult mentor and scheduling time with him or her, participants said finding the right balance of expertise and flexibility was often challenging. One graduate who was looking for a saltwater fly fishing guide to work with and learn from said the process was difficult: “We have many multiple options of what we can
do. Then you need to find one person to help you do it. And if that one person you’re thinking of, because you may have an open schedule or something, but they may not or they drop out on you, then you have to find another person.” Similar to choosing a mentor, the paper also proved challenging to participants with respect to the number of choices they had with respect to topic, direction, and, beginning with the Class of 2014, the type of paper—i.e., informational or argumentative. One graduate who wrote about the need to protect bees said about her paper-writing experience, “Just you have to gather that data. You think about the components of the paper and the frame. It was hard, specifically, to find a lot of articles talking about laws that have been passed to protect the bees, and I kept having to dig a lot to find those since it was one of the aspects that I wanted to add to my paper.” Finally, with respect to students organizing, designing and completing their fieldwork, participants said a myriad of obstacles presented themselves, from unreliable mentors to scheduling conflicts, from unforeseen technical glitches to interpersonal conflicts. One graduate who organized a young adult literature conference never thought that working with her friends would be so challenging:

I had two groups of volunteers. I had National Honor Society volunteers, who got volunteer work hours for helping with my project, and then I also just had my lovely friends. So managing my friends was really difficult because I really didn’t want to make anybody angry with me, but I also really needed them to do 25 things at once, and I was getting kind of stressed and yelling a little bit more than I probably should have.

So, I think that senior project really taught me how to keep my cool in those situations

Another graduate who explored carpentry for his fieldwork experienced a debilitating knee injury that put him in a wheelchair for a month and unable to work on his fieldwork: building a doghouse for his dog with his mentor. During this time, he experienced a lack of confidence in
his mentor and in his own ability to complete the project. He eventually did, and the dog house he wanted to build was completed; he said, “One value of my project – it taught me to be disciplined.”

**Researching and writing the paper and engaging in fieldwork called upon students to acquire and/or demonstrate skills they found useful in the real world.** Consistent with their responses to Research Question One where they said they valued the writing, public speaking and organizational skills they gained from the project, believing these skills will or knowing they have served them well in college and/or the future, several graduates said the authentic, self-directed aspects of their experience caused them to learn or practice skills necessary for success in the real world. Again, the paper, fieldwork and final presentation were the aspects of the project that necessitated and engendered these skills, with participants agreeing with, as one graduate of the Class of 2014 put it, “doing longitudinal work like [the senior project], I think that’s really important to teach students to activate, to focus on something for a long period of time, because that’s what ends up happening in college.” Specifically, graduates said the research paper helped hone their organizational and writing skills upon which they were called to employ more fluidly and independently after graduating from Bayside High School. One member or the Class of 2016, now a college junior, said, ultimately, writing her senior project paper taught her how the really important decisions as a writer were up to her:

Writing that long paper and the way we were taught to organize it in groups of paragraphs, but it doesn’t really matter. You don’t have to have three or four [body paragraphs]. You can have how many ever you want. That’s how you’re going to write a college paper. You’re just going to have to think of it more yourself and you’re going
to have to be more loose with it and let the ideas drive the organization and the content. Along with this understanding, participants said the research process itself and the need to gather, select, and synthesize information from a variety of sources were skills they needed in college when research became even more authentic and self-directed. One graduate, now a college senior, said she found the skills she developed with her senior project paper on young adult literature served her well in college:

So, you definitely had the construction of an independent research project. And, now, that is literally all I do. Like that’s what I’m doing this summer. And it’s the same pattern over and over and over again. I am researching physician-assisted suicide in Switzerland, the Netherlands, and the U.S. I’m helping a professor with that. And then I’m also doing independent study on civic engagement among college students in the Boston area during the summer. Basically, I’m just going out and interviewing students, activists, and leaders, and going to different social movement events in the Boston area during the summer and seeing if there’s any pattern.

Similarly, participants said their fieldwork experience leaned heavily on their autonomy, independence or poise, skills they found that college required of them but did not necessarily teach them. One member of the Class of 2014 who took her senior project as an opportunity to explore a totally different path, surfing, said the intrapersonal skills she gained out on the water were invaluable to her once she got to college:

I think those lessons [about balance] were really important in college. Because, suddenly, in college, you feel like you don’t have a ton of control over your life. You go to this place really far from home, and suddenly you have so much responsibility, and you have so many assignments, and so many things weighing down on you. I think that
that lesson I learned is to kind of slow it down and be conscious of what I was feeling, and how I was doing mentally. Through what I learned in surfing, I think that was really important for me in college. So, yeah, I definitely learned a lot about myself in that sense.

Finally, graduates said delivering the Senior Boards presentation prepared them for the authentic, often self-directed, public speaking assignments and opportunities they experienced in their lives after Bayside High School. One participant who built a 3-D printer for his fieldwork even said he learned that providing his audience with something tangible to hold on to and to inspect during a presentation is an effective means of engaging their minds and bodies:

Well, when I pitch an idea or something, handing out fun little things to grasp and feel is always a good thing, because I know my actual presentation went well because I had a bunch of things that I 3D-printed out, and I just gave them to everyone. Everyone was like, “Oh, my God, this is so cool,” you know, and definitely that was nice. Have something that you can touch. That’s definitely something for me, because I like to learn with my hands. That’s the only way to learn for me.

This Bayside High School graduate is now attending a four-year technical college to pursue his interest in technology and design, having gone on to build his own computer.
Research Question Three: Given the desired outcomes of the project as put forth by the school, how do current seniors and high school graduates believe senior project could be redesigned to have a greater impact on students’ experience and learning during and after high school?

The “desired outcomes” of the senior project are best articulated in its Mission Statement and Letter to Seniors which have occupied the first two pages in the Bayside High School Senior Project Handbook since the project began in 1998. The mission statement reads:

The Senior Project challenges students to demonstrate and display their mastery of many of the skills they acquired during their years in the Barrington Public Schools. One of the goals of the Senior Project is to allow students to take control of and have a powerful voice in their own education and development both as learners and individuals. Student choice and personal interest are valued and recognized during each phase of the Senior Project. It is an opportunity for students to demonstrate what they know and are able to do and to showcase their achievement. (Bayside High School, 2017, p.2)

Similarly, with respect to the desired outcomes of the senior project at Bayside High School, the Letter to Seniors (Appendix B) reads:

The Senior Project at [Bayside] High School builds a bridge between the skills you learn in the classroom and the real world. The three phases of the Senior Project are: 1) a paper on a topic of your choice; 2) fieldwork with a mentor relevant to this topic; and 3) a formal presentation before a panel of judges in which you will communicate and reflect on your experience as a whole . . . Almost any topic is open to you –as long as it is legal, appropriate, demonstrates a learning stretch, and meets your parents’ approval. Ask yourself, what have you always wanted to know more about or to learn how to do? What
career or personal interest do you want to explore? If you choose your project carefully, your experience should be exciting and challenging. (Bayside High School, 2017, p.3)

During the focus group discussions, graduates identified several aspects of the project they felt could be redesigned, given the desired outcomes of the project, to have a greater impact on the learning of future seniors at Bayside High School both during and after high school. Table 4.4 outlines the themes that emerged during the focus group discussions.

Table 4.4

*Themes from Recent Graduates in Response to the Third Research Question*

<table>
<thead>
<tr>
<th>Theme</th>
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<tr>
<td>Give students more freedom with respect to focus, structure, form and timing of major components of project, making it more authentic, self-directed and meaningful.</td>
</tr>
<tr>
<td>Provide more guidance and direct support in framing project, finding a mentor, selecting paper topic and determining the scope of paper.</td>
</tr>
<tr>
<td>Eliminate steps in project from which students derive little value but require inordinate time and effort—i.e., “busy work” —or feel are repetitive.</td>
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<tr>
<td>Provide underclassmen with more opportunities to learn and explore outside of the normal school environment and a better understanding of what the project will ask from them.</td>
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<tr>
<td>Take some things “off the plate” of students who are already spread thin during senior year and replace it with the project to help relieve stress and already overburdened schedules.</td>
</tr>
<tr>
<td>Review the “pass/fail” aspect of the project as it can be a disincentive to student effort, engagement and learning.</td>
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**Give students more freedom with respect to focus, structure, form and timing of major components of project, making it more authentic, self-directed and meaningful.**

Although most graduates said they valued the authentic and self-directed elements of the senior project, many also said they felt it could be improved for future students by providing them with
even more freedom and choice. Participants pointed to the somewhat artificial or forced connection between their paper and their fieldwork and the rigid form the paper must take as dampers on their overall experience. Graduates also found that a project that promised them so much freedom was too often regimented with respect to the timing of the paper—i.e., the first semester of their senior year—and the strict due dates and number of steps in the writing process which they had follow to receive full credit lent a “cookie cutter” feel to the project. Finally, participants complained that the extreme focus placed upon the paper compromised the meaning and pleasure they derived from their fieldwork experience, some feeling that both their paper and their fieldwork were “devalued” as a result.

**Focus and structure.** Currently, the senior project at Bayside High School requires students to develop a project at the beginning of their senior year that primarily consists of a minimum of 15 hours of fieldwork with an experienced, adult mentor and a 6-10 page research paper both of which are related in a substantive and tenable fashion. The *Bayside High School Senior Project Handbook* instructs students to articulate this “link” in their letter of intent or project proposal: “What is the connection or link between the topic of your Paper and your Fieldwork project? How are these components related and how do they together represent a concerted effort to explore your topic or area of study?” (Bayside High School, 2017, p. 8). Currently, these letters may be submitted as early as August before a student’s senior year begins, but for most participants in the study, their letters of intent were due in mid-September. For many of these graduates, this requirement, coming so early in the project process was problematic. One graduate observed:

> A lot of people had a really cool idea for something they wanted to do for their fieldwork and sort of just phoned in some sort of—I don’t want to sort of cast aspersions on people,
but they sort of found a paper that would go with that . . . I mean, it makes me think that there’s a sort of interesting disconnect between the two sometimes. I don’t know that the two always went that well together, and I don’t know that the structure of the way in which they are linked is necessarily the best structure.

One recent graduate—who explored the psychology of video games and ran a gaming tournament for his fieldwork, collecting research data from participants through a survey—said having to link his field experience to a paper was unsatisfying for him given the requirements of the paper which made it difficult for him to include the findings from his survey in a way that was satisfying for him:

For me, the only part about it that was actually student-driven was the choice of topic and kind of how we do our fieldwork. That was it, because we had to meet requirements for everything the entire way through; so, instead of actually being a student-driven project, it was a ‘student-pick’ project. We got to pick what we want to do, but then after that it’s the same cookie-cutter layout for everyone.

The “yes test” for the paper—a punch list of basic requirements ranging from its length, to the number of sources and citations to be included, to the type of voice students must maintain in their papers (formal with no first- or second-person pronoun usage) —has been a staple of the project since its inception in 1998. For many participants, this list of requirements that must be met before their teachers read their papers for content was an unnecessary burden for them. One participant who helped teach civic literacy classes to immigrants ended up writing his research paper on the history of immigration in the United States and was left wanting more: “If there was some way that I could have had a little bit more freedom to tie what my fieldwork really meant to me into the paper or other things that I did, that I learned, in a way that I was choosing, rather
than trying to fulfill requirements that would have been even better.” This student referred to his research paper as “just the paper component,” admitting, “I was in this project for the fieldwork [laughs] more than anything else.”

**Form and timing.** For other graduates, it was the timing and pressures to develop a meaningful link between their fieldwork and paper as seniors—even though they were introduced to these guidelines and expectations at the end of their junior year—that made the situation frustrating and less meaningful. Some of the concerns about the link between the paper and fieldwork voiced by participants stemmed from the fact that students had limited choices for the form and scope their research paper would take. Up until the 2014-2015 academic year, students were required to write an 8-10 page thesis-driven research paper. Beginning with the Class of 2015, seniors were allowed to choose whether they would write an informational or an argumentative paper, both of which required substantive research, including a personal interview—another staple of the project since its beginning. Still, graduates stated that two choices were too few. One member of the Class of 2015, who was pleased with the argumentative paper he wrote on the United States legal system, said even more variety and choice with respect to the form and scope of the paper is necessary: “I would recommend giving students more options to do non-academic forms of writing, such as journalism, letters to representatives, and speeches—with the same page count and standards of writing, of course. I feel that this would go well with the project's ethos of ‘real-world experience.’” Another participant, a member of the Class of 2017 who built a 3-D printer for his fieldwork, said what he felt was his limited choice of paper topic restricted him, making him feel as though he had to bluff his way through this component of his project:

[The connection between my fieldwork and paper] was pretty horrible, because I
just struggled doing it, because my research point was the benefits of CAD [computer-assisted drafting] in education, and there was absolutely nothing on that. I think I found one total quote on that. And it wasn’t even directed at education. It was just stuff in general, so I used that in [my paper], luckily enough. [laughs] And then, I—not to lie or anything—I basically had to nonsense my way through it.

Similarly, another graduate who explored belly dancing for her fieldwork and who will be a senior in college said she felt “boxed in” by the paper requirements and yearned for more personal choices and decisions: “I think there’s ways that students can actually have a little more self-agency than that,” she concluded.

Participants also found that a project that promised them the opportunity to allow “to take control of and have a powerful voice in their own education and development both as learners and individuals” was too often constraining with respect to the timing when the paper was required to be written—i.e., the first semester of their senior year—and the strict due dates by which they had to abide in order to receive full credit for their work. One graduate said, “I didn’t feel like I was in control of something that was that meaningful, you know . . . So being in control, you know, within the sort of guidelines of having to [meet the deadlines and complete each step in the writing process], being in control existed, but it didn’t feel like I was in control of something that mattered.” One recent graduate who participated in a “fast track” paper writing pilot program open only to those students in her advanced English class said actually being given more control over her own writing process was helpful. The option was an experiment during the 2016-2017 academic year in response to criticism from seniors and senior English teachers with respect to how rigid the paper calendar was and how much classroom time it took away from the regular curriculum. It allowed students to choose to omit certain steps in the paper writing
process as long as they completed steps designated as necessary—e.g., demonstrate breadth of research, an outline annotated with research findings, a first draft, etc. Common deadlines for these required elements were followed, but students in this class were allowed greater freedom to write their papers the way they wanted to and that worked best for them as learners. The participant said of her experience in the pilot program:

It meant that little things that you wouldn’t normally include in your learning process, like I don’t really want to just write out my introduction and stop there and then give it to [my teacher] and wait to get it back. We sort of skipped over stuff that inhibits you from feeling you’re controlling your own learning. So, I think stuff like having to write out your introduction [before you write your paper] only kind of brings you back down to the reality of “Okay, there are deadlines for this, and my teachers—I’m doing this because my teacher’s telling me to, and I’m going to hand this in, and then I’m going to get a 100 on it because I completed it, and then I’m going to get it back and then I’m going to—” I think that’s what sort of made it always feel more contrived and artificial.

Another member of the Class of 2017 who did not get the opportunity to try the “fast-track” option for writing his senior project paper sounded like he would have enjoyed the opportunity, perhaps making him feel more in control of his own learning, with the understanding that he knows how he learns best:

And some teachers are absolutely more than willing to let you learn how you learn as long as you learn the information, but a lot of the times I’ve noticed, either from friends of mine or from myself, that some teachers will just stick to their guns, teach how they teach, and if you don’t learn, sucks for you … So I think if this is actually going to be a student-driven thing, students need to be able to learn how they learn best, and that
choice is up to them, because no one knows how you learn better than you do.

Concerns like this young man’s were echoed with participants whose criticism of the paper extended to the importance placed upon it by the project itself.

Graduates were critical of the extreme focus placed upon the paper, saying that it compromised their fieldwork experience, resulting in both elements of their projects being “devalued.” One student’s experience, in particular, illustrates these sentiments. The member of the Class of 2014 who explored belly dancing for her fieldwork said that having to link her field experience to a paper was an uncomfortable leap for her given the requirements of the project:

There was just this disconnect between the project and the fieldwork that I think really devalued both of them, if that makes sense . . . I felt like for me, I really had to work to make the jump between my field work and my paper. And for some people it wasn’t even possible. And then there was sort of like a way out [by switching your paper topic to something less interesting], which then further devalued it for people who really pushed their field work to make it cohesive with their paper.

As a result, she said her paper writing experience seemed more like an exercise than further exploration of her topic; additionally, she said that as a senior in an advanced English class at Bayside, she felt she had already demonstrated that her writing skills were strong:

The paper was the focus instead of the field work. And I feel like I almost wish that it had been more of the other way around because at that point, when I was in AP Lit., I knew how to write a good research paper with secondary research that I found on JSTOR and ProQuest and all that stuff. What I didn’t know was how to interact with adults in the real world and how to get them to talk to me and give me information about what I wanted to know—the stuff I can’t find on Google or in an encyclopedia.
The nature of the research she was asked to do for her paper when it came time to begin the writing process also left her unsatisfied considering that the project had initially asked her “[W]hat have you always wanted to know more about or to learn how to do? What career or personal interest do you want to explore?” Instead, she said she ended up taking a more pragmatic approach to researching and writing her paper, finding no encouragement to do otherwise: “I feel like I found sources and just made them work. And I wish there was more incentive to actually get out and have more interviews, and get a little more, I won’t say data, but like a little more need to do it instead of me just dealing with secondary sources.” Ultimately, she said she felt “inhibited” by the paper writing process and what she perceived as the rigid and artificial expectations that drove it, concluding:

Most of my frustration was definitely with the paper. I guess if someone had told me, ‘You don’t want to have 10 to 12 academic sources. Instead you want three separate interviews with three women who all do belly dance for various reasons. Do that instead,’ I would have jumped on that. And I think also having less structure would have been really helpful . . . In some ways that made it so our papers turned into a little bit of bullshit for lack of better words. You know, we just kind of tried to rack up the sources because we had a required number instead of actually having maybe like four really good sources or three interviews with belly dancers.

This participant’s experience is consistent with that of other graduates with respect to the various elements of the project and how they perceive them as inhibiting or limiting their learning experience.

**Provide more guidance and direct support in framing project, finding a mentor, selecting paper topic and determining the scope of paper.** Although graduates said they
valued the opportunity to work closely with an adult in a professional setting to learn and explore outside of the normal school environment, many also said they would have appreciated more guidance with specific elements in the senior project process. In particular, participants said they would have appreciated more guidance at the start of the project because many had not been given a/an task/opportunity like this before in their academic careers, especially when it came to determining the scope of their project as a whole and, more specifically, finding a mentor. Other graduates said more direction at the start of the paper writing process with respect to selecting a topic and a focus would have helped them not only write a paper they could be proud of but also experience less stress along the way.

Students at Bayside High School (and their parents) are formally introduced to the senior project in April of their junior year. The informational presentations delivered by the project coordinators provides an overview of the nature and scope of the project and outlines the basic requirements of choosing a project and a mentor as outlined in the school’s Senior Project Handbook on the topic selection page of the “Getting Started” section (Appendix D):

Your paper and fieldwork selection for Senior Project deserve a great deal of contemplation and discussion. Some restrictions that apply to your choice are:

- it’s legal and appropriate,
- your parents agree with it,
- and it represents a learning stretch for you.

A learning stretch means that your Senior Project will serve to “stretch” your skills and knowledge in a particular area. Your project must be both challenging and achievable for you. Therefore, if you have previous skills or experience in a topic you are considering, you will have to explore this subject in a genuinely new and challenging manner, not just
repeat what you already know or have already learned . . .

It has been our experience that students who take great care in this decision enjoy Senior Project immensely; on the other hand, those who make an "easy," "quick" decision and fail to challenge themselves tend to worry the most and reap fewer rewards. (Bayside High School, 2017, p. 7)

It is the student’s responsibility to follow through on these tasks, although the project coordinators, his/her senior English teacher, and mentor are available to consult with him/her during this stage of the project.

**Framing their project and finding a mentor.** Still, graduates said they would have benefitted from more direct, hands-on guidance from the coordinators and their teachers at this initial stage of developing their project. One graduate of the Class of 2015, whose experience was emblematic of students who raised concerns about this aspect of the project, said this about his experience developing his fieldwork and finding a mentor:

I think it would have been nice if [Bayside] High School had, maybe, formally put together some sort of recommendations that made you really think about what it’s actually going to be like to schedule [15 hours of fieldwork with a mentor] over a period of time and what sort of person you should be looking for as a mentor. I remember, my mentor wasn’t my first choice, so he wasn’t the person closest to me. Maybe ask us to consider before you choose a topic what resources and what opportunities are closer to you or make more sense for you to pursue [for your fieldwork] … Maybe this is just something I should have done with my own personal planning, but it would be nice if we had a recommendation, instead of looking first for a topic, because that’s like diving into,
you know, the great big sea. Maybe ask us to look for things: “Do you know anyone? Are there any things in town you’re interested in?”

This participant, who pursued saltwater fly fishing for his fieldwork, ended up travelling more than 40 minutes to and from his appointments with his mentor, a saltwater fly fishing guide, driving from one side of the state to the other. Although he said he ended up enjoying his fieldwork and valued the opportunity to pursue fishing, a true passion of his, he wished he had been provided with more guidance with respect to how to tap into local networks to find a mentor closer to home. The primary challenge of the project— “[taking] great care in [his] decision . . . [and challenging himself]”—initially proved daunting for him, he said, and a little bit of guidance on “the practical side” of the choosing a topic and mentor would have gone a long way:

If you’re going to do something like try something new, well, there are a hundred different new things you could choose. But you could also make it really hard for yourself by just choosing one thing and then coming to realize later, “Oh man, well, I’m going to have to drive an hour like five times to meet him, and then an hour back to get all my field hours in.” And this person’s also working his full-time job. Is it going to make sense? You know, are the hours going to work out? So maybe a little guidance and heads up from the school on what the sort of practical challenge it is to find a mentor and get those hours in would have been helpful.

Ultimately, this young man said this type of advice at the front end of his project may have saved him a lot of time and frustration:

I might have tried to actually try to work more with someone that I already knew and just chosen a different topic or, at least, someone closer or with someone who
understood what senior project was, maybe, because his kid did it or he had to do something similar. That would be one thing I would have liked to have changed about my senior project experience.

Again, this participant said he benefitted both personally and skill-wise—i.e., as a lifelong fisherman—from his fieldwork experience with his mentor; still, in the words of another graduate, it is understandable how his senior project journey did not have to be such a struggle for him even though he took the project as an opportunity to pursue a topic of personal interest to him:

I think if there was some way there could be more support at the start of the project for students who aren’t sure what they want to do for their senior project, that would be really helpful, because when you have a project that you’re super passionate about, you don’t mind doing the work, and you’re really engaged with it through the entire process. But I had some friends who didn’t really know what to pick, and I can see how that could lead to a lot of frustration down the road, when you’re asked to do all this work and you don’t really want to do it or you don’t really know how to do it. So, if there was some way that, you know, more students could find something they’re passionate about, I think it would help with a lot of issues down the road.

Both of these graduates of Bayside High School said they ended up enjoying and benefitting, overall, from their senior project experience; however, both were left wondering: did it have to be so hard to get started?

Other graduates had similar stories to tell of the frustration of framing their project and finding a mentor, specifically because it was the first time they were called upon to do something like this in their academic careers and the stakes were high: successfully completing
the senior project is a graduation requirement at Bayside High School. One participant said her stress level was great due to the fact she had never been asked to work this closely with another adult with whom she was unfamiliar before who was not one of her parents or a teacher: “It was my major source of stress, I think, for me and a lot of people, because there’s just someone else. And there’s always—especially if it’s someone you’re unfamiliar with, you know, you’re asking them to do something, and you don’t know their enthusiasm level, and you just don’t know if they’re the best person.” Another graduate, a member of the Class of 2014 who organized a young adult literature conference for her fieldwork, said she had encountered a similar problem when she got to college and overcame it, largely due to her senior project experience:

It’s also just a lot of responsibility because it’s so open. You kind of get caught with the “radical freedom” problem, where there’s almost too much to choose from. I think that just being able to focus yourself, and focus your interests on a topic that interests you, but also on a specific project, and only 15 hours of fieldwork, and only one essay, is a really important skill to learn in college, when your options are pretty much infinite, and the structure you had in high school has just all but disappeared.

Finally, another graduate, a member of the Class of 2013, suggested that providing seniors with a list of past mentors in the local community would be helpful to them as they are getting started with their projects; she also thought allowing students to work with their mentors prior to their senior year in high school would be beneficial.

Determining paper topic and scope. Still, other participants targeted their paper writing experience as the step in their senior project when they could have used more guidance and direct support from project leaders and teachers at Bayside High School. Students must submit
a letter of intent or proposal by mid-September of their senior year outlining the scope of both their paper and fieldwork and receive approval before they can begin work on their project. Class time is provided for students to do preliminary research on their paper topics to determine how tenable they are and how much information is available on them before they submit their letters or proposals; during these two or three class periods in the school library, most senior English teachers also take time to conference with their students about their ideas. In discussing the steps he took to focus his paper on photography and settle on a paper topic, one graduate echoed the sentiments of other participants, saying that he still found himself uncertain of how to proceed with his paper because he had never been asked to do this before at Bayside High School:

Reflecting on high school, I think, a lot of the time, they tell you what to do and you do it. But this project, it was giving you freedom, and that's something maybe we're not used to . . . Projects are usually harder when you have freedom and no kind of structure. One class that I kind of struggled with in college was sociology because there was so much freedom in the papers you could write. So I think almost being trained to be given the project, do the project, and do it the best you can is what we're used to, and then senior year, it's hard to actually generate our own idea, because we're not really used to that.

Other participants agreed that “framing the paper” was difficult for them, primarily because they felt somewhat overwhelmed by the amount of information and the task that lay before them. One recent graduate who worked with a beekeeper for her fieldwork said about her early paper writing experience, “Just, you have to gather the data, you think about every aspect of the topic and the components of the paper. You have to frame your paper a certain way . . . It was
hard specifically to find a lot of articles talking about laws that have been passed to protect the bees, and I kept having to dig a lot to find those, which was one of the aspects that I wanted to add to my paper.” Other graduates said more direction and less freedom from the beginning with the paper would have helped them. A participant who worked in a beauty salon for her fieldwork and is now a junior at a four-year college said she needed “more structure”:

For me, it would have been helpful to be given a little more structure when it came to writing the paper, because that's what I struggled with the most . . . Because at the college level, they give me prompts that are a lot more structured, and it's easier for me as opposed to just, “Write about anything you want.” That's why I feel like if we had that for the paper—because we had that for the presentation—so if we had that for the paper, I feel like it could be very beneficial.

Traditionally, for the final public presentation that marks the culmination of each student’s project—and ultimately determines whether they “pass” the project and are eligible to graduate—students are provided with an outline complete with the questions they need to address for each component in the presentation. Although students are encouraged to be creative and make their presentation their own, most adhere to the structure of the outline to determine the shape and content of their talk. Another graduate, who praised the fact that she was allowed to choose her own paper topic, still agreed that more guidance when it came to developing the focus for her paper was necessary:

I thought that being able to choose your own research topic, your own paper topic, specifically, was a really good way of being in control of your own learning, but I also found it a little bit overwhelming as a high schooler. Just because it was so hard to narrow it down, and I had no idea what would make a good essay at that point. I
honestly don’t remember how much guidance we had for the thesis statement, but I feel like it should have been a lot.

Despite concerns like these regarding the need for more hands-on direction and guidance by teachers during the initial phases of writing their papers—e.g., its scope and focus, development of thesis/controlling statement, suggestion for research and alternative sources—most participants said they still wanted more choice and flexibility when it came to how their papers related to or extended what they did for their fieldwork. As one graduate said, “If there was some way that I could have had a little bit more freedom to tie what my fieldwork really meant to me into the paper, in a way that I was choosing, rather than trying to fulfill requirements that would have been even better.”

**Eliminate steps in project from which students derive little value but require inordinate time and effort**—i.e., “busy work”—**or feel are repetitive.** More than one third of the participants expressed frustration over certain required elements of the project that they considered to be unhelpful considering the amount of time they had to devote to them or the fact that they found them repetitive. Several used the term “busy work” to describe these assignments. One participant, when asked to do so, defined the term: “It's time that you don't need to take,” he said, “[time] that could be spent on something more valuable.” In keeping with this definition, graduates focused their criticism on several steps in the paper writing process along with a few other tasks in the project they viewed as unnecessary or redundant.

By far, participants were in agreement that the senior project paper at Bayside High School could be a more streamlined, less onerous process with fewer deadlines and incremental steps. Several graduates said the requirement to document the depth and breadth of their research during the early stages of the paper was not worth the time they spent completing
them. One participant said, “I do remember a lot of busy work being involved. I remember being in the library, rushing through these source descriptions. There were these sheets that we had to talk about our sources and write them down . . . Source information sheets! [a chorus of agreement] I remember those kind of being tedious.” Source information sheets, eight of which are required for most students, require them to note the necessary MLA information for each source and identify data, details, and other information from the source they feel may be of use to them when writing their papers. Since this young man graduated in 2013, students were still required to document their research, but, starting in 2014-2015, they are now allowed to do so using any method that suits their needs as a learner, including source information sheets but also notecards, ten percent summaries, or notes taken directly on a print copy of the source itself, etc. Still, the member of the Class of 2016 who directed a student theatrical production for his fieldwork, remembered his experience with source information sheets, in particular: “I was looking forward to doing an entire project focused around something that I loved and wanted to get involved in, and then I'm sitting here every day, trying to write down these friggin' sources . . . It was just frustrating.” Another graduate said the annotated outline that is required of all students was, for her, insulting: “I just remember being like, ‘We’re not idiots. We’re all good writers. We know how to do this. We don’t need someone to hold our hands.’ And like understanding that not everyone needs to do this.” The annotated outline requires students to not only demonstrate the structure their paper will take but also includes a full introductory paragraph with revised thesis/controlling statement, topic sentences, supporting information from at least six sources, a brief summary of each section, concluding/transitional sentences, and a bibliography. It is the last step before students write their first draft. “I just remember being very overwhelmed with a lot of busy work,” said one participant regarding the
paper process, “I thought I would enjoy writing about it a lot more because it's a project focused around something that I love so much.”

Graduates also took exception to the journal reflections they were required to write throughout their senior projects, saying they were repetitive, a waste of time, and, in some cases, inauthentic. A reflective journal entry is required after each major component in the project—getting started, fieldwork, paper, and a summative, final reflection; however, although it is suggested that students both write and teachers assign these entries at appropriate and relevant times during the project, in practice they are only formally checked and recorded as completed at the beginning of April when students are compiling their portfolios in preparation for their final presentation in May. In 2013-2014, the final, summative journal reflection was eliminated due to its perceived redundancy in relation to the final, required “Letter to the Judges” which serves as a cover letter of sorts for each student’s senior project portfolio; in the first two paragraphs of the letter, students are asked to reflect back on their learning experience at Bayside High School, in general, and in their senior project, in particular. Still, even with the reduction in the required number of reflections from three to four, graduates found the project journal requirement a tedious chore. A member of the Class of 2015 said the journal entries fit the definition of “busy work” and this led him to make a pragmatic decision about how he would complete them: “I remember everyone that I knew in my grade, we all just cranked [the journal] out like the last week before it was due, because I don’t know, it was just kind of busy work.” He said he was never sure why they were required or what their purpose was, but he felt they were redundant: “I don’t know if they were really just a tool for the teachers to check in and make sure we enjoyed senior project but it just seemed a little unnecessary . . . You’re reflecting on your fieldwork. You know, kind of in your
own head and you’re reflecting on your paper, but then they want you to then also reflect on it again and on senior project [in your letter to the judges].” Other participants said “all of the little assignments” like the project journal caused them stress and, in the end, were unhelpful. A member of the Class of 2017 had similar concerns with her experience with the project journal and the other contents of her portfolio, saying, when it came time for her to think about her final presentation, she felt like she was repeating herself: “The letter to the judges, as well as all the little letters [journal entries] that we wrote along the way about different pieces of the senior project, I feel it was all the same information, which then just made the presentation more challenging, because it just felt like we were saying the same things over and over.”

Provide underclassmen with more opportunities to learn and explore outside of the normal school environment and a better understanding of what the project will ask from them. Consistent with findings from Research Questions One where graduates said they valued the opportunity to “get out” and learn and explore outside of the normal school environment, several participants said they would have benefitted from more opportunities earlier in their high school careers to learn in more non-conventional ways in more authentic settings. Along with these new learning experiences, graduates said they would have gained from having a better, more accurate vision of what the senior project would require from them.

Participants said their senior projects were really the only time they were required to learn about and explore a topic outside the walls of Bayside High School. One graduate who worked with a beekeeper in the field for her project said she would have benefited even more from her experience if she had had similar smaller experiences outside of school as an underclassman:
I thought [my project] would be a good opportunity kind of to learn more about the environment. But I feel like if I was younger, maybe a freshman or sophomore, I feel if you had mini-papers where you could go out into the community and do something interesting that we liked and then kind of report back on it, I feel like that'd really interesting and beneficial for students to express about what they learned and what they liked about it. It kind of just gets them more out and about… And so, when senior paper comes, you're like, "Okay, I kind of have a feel how to do this.” And if, let's just say did something and you didn't like it, then you could totally shift, but you'd have that experience.

Other participants echoed this idea, saying that not only would such opportunities provide students with important skills and information, but it would give them confidence to perhaps choose a “bigger,” more challenging senior project. Additionally, graduates said providing students with more choices and freedom in the curriculum at an earlier age will give them the confidence and experience to exercise it when it comes time for them to plan and execute their senior projects. One participant who learned photography for his project figured that if he had had more time and opportunities to explore other interests and avenues, he probably would have chosen something he was more “passionate about,” saying, “Reflecting on high school, I think a lot of the time, they tell you what to do and you do it. But this project, it was giving you freedom, and that's something maybe we're not used to.” Another graduate added, “Just from the beginning, I think these kids should be given an opportunity to kind of think about what they want to do . . . and be allowed to explore different activities, different hobbies, different passions that they could find and fall in love with so that come senior year, they're not struggling: ‘Man! What the hell am I going to do for this project?’”
Along with these earlier opportunities for learning outside the normal school environment, participants said they would have benefitted from knowing more about what to expect from senior project. Some graduates said they got the impression as underclassmen that the project was something to be feared and that it was overwhelming. One participant said about her initial understanding of the project, “My first three years of high school, I was thinking, ‘Oh my God, it's this terrible thing.’ I didn't even know exactly what senior project entailed, which I think is part of the reason it became this huge monster that everyone's afraid of . . . So maybe just telling freshmen exactly what senior project is going to be and maybe getting them to start thinking about it as they're going through their four years of school [would help].” Traditionally, both students and their parents are formally introduced to the project in the spring of their junior year. Another graduate said because he was made to believe that the project was more of an obstacle than it turned out to be, he was initially hesitant to pursue a topic that was truly interesting to him: “For some reason or another I got the impression that it was a little bit daunting and that it could be made easier by doing something that you’re more familiar with.” This young man did end up pursuing a passion and worked with a saltwater fly fishing guide for his fieldwork, something he had never done before. Finally, one graduate suggested that seniors who have completed their senior project talk to underclassmen about their experience and dispel some of the mystery about it: “I know that a lot of people are stressed out about it. I think it’s usually helpful for students to talk to someone closer to their own age, and I think it would be helpful for students who have done it in prior years to come in and just answer any questions that they had, or talk about their experience.”

Take some things “off the plate” of students who are already spread thin during senior year and replace it with the project to help relieve stress and already overburdened
schedules. Several participants noted the fact that although the senior project is added on to their normal workload for their senior years, nothing is taken away to help balance the work, effort, and time required to successfully complete this new assignment, not to mention all the other responsibilities that come with a student’s final year of high school. In some cases, they said, the consequences of this overloading of responsibilities compromises the projects students choose to pursue. A member of the Class of 2014 said the promise of the project did not ring true with the reality of her senior year:

I think that the senior project in general is presented to us as a way to kind of, like, regain control of your learning experience, and it’s kind of cued up as “You can do whatever you want. Make it something enjoyable.” But I think, in reality, how is that supposed to happen when we have everything else on our plate? It’s still there. It’s not like we take fewer classes. It’s not like we stop our extracurriculars. We just now have this additional project. And adults are like, “Go nuts. Have fun!” But it’s like, I still have this whole other life that I’ve constructed which is full to the brim of stuff.

As a possible solution to this problem, graduates said students should be given the opportunity to begin their senior projects over the summer. Currently, only students with individual education plans (IEP), special circumstances, or those planning on graduating early can start their project at the beginning of the summer, provided they submit their letters of intent as juniors in early June. As of 2011-2012, this “early start” option was extended to all seniors who could, if they chose to do so, submit their letters in mid-August. Still, participants said every student should be afforded the opportunity to begin their project at the end of their junior year, instead of having to “jam it all in during the senior year and create so much stress,” according to one member of the Class of 2016.
Besides extending the early start option to all students, participants were more specific with other remedies to the problem, including “putting away the normal curriculum” while seniors worked on their projects or that the project itself is considered a class in and of itself, taking the place of another one, “just so you were more immersed in whatever you’re doing.”

Still, one of the most shocking “solutions” came in the form of a recommendation to future seniors at Bayside High School. A member of the Class of 2013 said, somewhat reluctantly, “If someone asked me what I should do for a senior project, I’d probably say pick something easy because you’ve got a lot going on in your senior year. And pick a sympathetic mentor or whatever the word is. But that’s not the kind of advice that I think you or the other people who would create senior project want us to give.” The nature of the discussion prior to this statement may shed some light on what this graduate meant by a “sympathetic mentor”: another participant had just confessed she had “[gone] through the motions” with her senior project and did not complete all of her fieldwork hours—but her mentor signed her fieldwork time log:

“And so for me, I mean, you can’t revoke my diploma, right, if I say I didn’t really do a lot of it? [laughs] . . . Right. So most of my hours were probably not completed. A lot of it was like just kind of made up stuff.” As part of their final portfolio, in addition to a letter of recommendation from their mentors, students are required to have a fieldwork time log signed by their mentor, verifying they completed at least 15 hours of work. In this case, “sympathetic” is synonymous with unscrupulous.

Review the “pass/fail” aspect of the project as it can be a disincentive to student effort, engagement and learning. Finally, several participants said that the pass/fail nature of the project interferes with students’ likeliness to embrace the opportunity it presents and realize its stated goals. Since 2003-2004, the senior project has been a graduation requirement at
Bayside High School. The various assignments and steps in researching and writing the paper and some contents of the portfolio are all assessed in some way and included as a percentage of students’ quarterly grades in their senior English classes; however, the final draft of the research paper and final presentation are both evaluated by district faculty and community judges on an “Approved” and “Not Yet” basis for meeting or exceeding proficiency (i.e., 70%) as determined by schoolwide rubrics. Students whose final papers or presentations are “Not Yet” proficient are allowed to revise and improve their work, frequently working closely with one of the project coordinators and/or their senior English teachers, and are allowed to resubmit their papers or deliver another presentation as many times as are necessary until they meet the standard and demonstrate proficiency. If they achieve this goal before graduation day, these seniors graduate with their class; if they do not, they continue working and, in most cases, receive their diploma at a later date (Bayside High School, 2017). Graduates said this scenario too often allows students to make decisions about their project based more on convenience or frustration than need or desire. When talking about her research paper, one participant who was enrolled in an advanced English class and was writing an original jazz composition for her fieldwork said, “I feel like the fact that it’s pass/fail gives you so much leeway in terms of ‘I need a 70. I don’t need more than a 70.’” Another graduate who built a 3-D printer for his fieldwork, found that when he was working on the second (teacher assessed) draft of his paper, he found himself not caring about its outcome or improvement: “It was just mentally frustrating. And when you finally get the paper in, you just don’t even get any satisfaction out of it … ‘Here, take it, pass me or fail.’ It doesn’t matter at that point because the final paper is pass-fail, so I was like, ‘Have it.’” Other participants said the pass/fail nature of the project caused them to view the project from a more practical or pragmatic perspective. One graduate
said it caused her to simply view her project as a “means to an end”—i.e., graduation—something that everyone had to complete by any means necessary:

Not to get to into it, but that was kind of a pretty consistent theme throughout high school, just kind of going through the motions. And for me, it was like, “Fine. I’m going to go through the motions. I’m just going to try to do it better than everyone else” . . . I was like, “If I’m going to be a sheep, I’m just going to be the prettiest one.” And I think with senior project, there’s not even that incentive. It’s just like you literally just have to do it . . . It was total bullshit . . . And that kind of frustrated me, honestly, because I don’t really consider myself a bullshitter,

Document Review

In addition to these focus group discussions and interviews with graduates from Bayside High School from the Classes of 2013-2017, this researcher collected and examined a variety of documents and media produced by the senior project in an effort to better understand the evolution of the project and how it may have influenced the experiences of participants. These documents included the project’s student handbooks from academic years 2011-2012 to 2016-2017 and its webpage on the Bayside High School website

Student Handbooks. The handbooks do not reflect many major changes to the senior project during the years relevant to the study. In most cases, the handbooks now shared electronically with students at Bayside High School are still very similar to the ones printed, bound and handed to students in the project’s first full year of operation in 1999-2000, following a yearlong pilot program. The handbooks are all divided into sections that generally follow the course of the project. They begin with a mission statement, a “Letter to Seniors,” and the year’s senior project calendar. Sections include “Getting Started,” “Fieldwork,”
“Research Paper,” “Portfolio and Senior Boards,” “Grading the Senior Project,” “Role of the Advisory Board,” “Contacting the Senior Project,” and “Research Paper and Oral Presentation Rubric Information.” Final student presentations are formally called “Senior Board Presentations” and the advisory board is a group of teachers, school and district administrators, and school committee members that “[enforce] the policies of the Senior Project . . . concerning deadline extensions and appeals of coordinators’ decisions” (Bayside High School, 2017, p. 52). Students must submit a formal petition to the advisory board to have their request reviewed. The board is also the body where issues of plagiarism are adjudicated. The board complements the project’s steering committee; however, it does not include students, parents, or community members.

Changes relevant to the study the researcher noted in the review of the handbooks and the project calendars (Appendix C) included therein were:

- As early as 2012-2013, students have been allowed at least two class periods of preliminary library research prior to the creation and submission of their letters of intent as early as 2012-2013 (Bayside High School, 2012);
- Beginning in 2012-2013, students are reminded in bold, red, larger font that they “cannot participate in any extracurricular activities” if they miss the deadline for their letters of intent, second drafts of the research papers, and/or project portfolio (Bayside High School, 2012, p. 38);
- In 2012-2013, students are instructed to identify what they will “argue” (p. 9) in their research papers in their letters of intent and are instructed to develop a “thesis statement” (p. 29) for their papers and are provided with examples; however, beginning in 2013-2014, they are allowed to choose whether they will write an
argumentative or an informational research paper and are told, “The type of paper written will be determined at a later date based on your preliminary research and your teacher’s guidance” (Bayside High School, 2013, p. 9);

- In 2012-2013, students are required to complete ten source information sheets to establish the depth and breadth of their research on their selected paper topic (Bayside High School, 2012); however, the following year, this number is reduced to eight, according to the project calendar (Bayside High School, 2013), and, beginning in 2014-2015, students are allowed to demonstrate their research through either source information sheets, short summary paragraphs of each source, handwritten notes, or annotated copies of each source as per teacher discretion (Bayside High School, 2014). Interestingly, the “Research Notes” sections of the handbooks reads as follows up until the 2016-2017 edition in which the previous change is noted: “There is no specific format that your Research Notes must follow. Everyone has his/her own preference or ‘system’ for obtaining and organizing the information gained through research ” (Bayside High School, 2014, p. 31);

- In 2013-2014, students are no longer required to create a preliminary outline as part of the paper writing process (Bayside High School, 2013);

- In 2014-2015, students are no longer required to write two drafts of the introductory paragraph as part of the paper writing process; instead, they write an introductory paragraph for their papers in their annotated outline (Bayside High School, 2014).

**Webpage.** The project’s webpage is accessible off of the main Bayside High School website and includes electronic versions of the senior project calendar, the handbook and other important documents relevant to the project—e.g., fieldwork time log, parent/mentor
Summary of Findings

This study is a qualitative study of graduates’ perceptions of the senior project at Bayside High School. The purpose of this study was to identify and describe what recent high school graduates of Bayside High School perceive they gained from their successful completion of a senior project and how these gains may be or were of value to them in their lives after high school. The researcher also sought to understand how the authentic and self-directed learning elements of the project contributed to participants’ deeper learning, and how the project might be redesigned in the future to better serve future students’ experiences with the project and the learning they take with them from it. The researcher facilitated seven focus group discussions and two personal interviews with 27 graduates of the Classes of 2013-2017. In addition, the researcher examined print and web materials to triangulate the data from the focus group discussions.

The themes from graduates about their perceptions of what they gained from their participation in the senior project and how these gains were of value to them, while in school and in their lives after high school included:

A. Graduates value the opportunity to select and explore a topic about which they are passionate or in which they are interested.

B. Graduates value the writing, public speaking and organizational skills they gained, believing these skills will or knowing they have served them well in college and/or the future.

C. Graduates value the self-confidence and pride they derived from their experiences.
D. Graduates value the opportunity to work closely with an adult in a professional manner and the relationships they formed.

E. Graduates value the opportunity to learn and explore outside of the normal school environment.

F. Graduates value the time to reflect on themselves and their own learning and personal growth.

G. Graduates value the future opportunities for which the project prepared them and/or made possible.

The themes from graduates about how elements of the senior project in keeping with authentic and self-directed learning contribute to their engagement and learning in the project included:

A. Choosing their own topics, determining the focus of their own research papers, selecting their own mentor and designing their own fieldwork allowed students to take control of and direct their own learning.

B. Fieldwork allowed students to explore personal or career interests and “learn through doing” in authentic, hands-on settings alongside an experienced mentor.

C. Fieldwork and the final presentation often resulted in tangible products or authentic performances that were meaningful to students and demonstrated their learning.

D. Fieldwork and final the presentation caused students to communicate their ideas, experiences and learning in authentic settings.

E. Allowing students to choose their own topics, determine the focus of their own research paper, work with a mentor and design their own fieldwork caused students to be accountable for their choices and actions.
F. The mentor selection process, research paper and fieldwork called upon students to solve problems and overcome setbacks.

G. Researching and writing the paper, engaging in fieldwork, and delivering the final presentation called upon students to acquire and/or demonstrate skills they found useful in the real world.

The themes from graduates about how they believe senior project, given its desired outcomes, could be redesigned to have a greater impact on students’ experiences and learning during and after high school included:

A. Give students more freedom with respect to focus, structure, form and timing of major components of project, making it more authentic, self-directed and meaningful.

B. Provide more guidance and direct support in framing project, finding a mentor, selecting paper topic and determining the scope of paper.

C. Eliminate steps in project from which students derive little value but require inordinate time and effort—i.e., “busy work”—or feel are repetitive.

D. Provide underclassmen with more opportunities to learn and explore outside of the normal school environment and a better understanding of what the project will ask from them.

E. Take some things “off the plate” of students who are already spread thin during senior year and replace it with the project to help relieve stress and already overburdened schedules.

F. Review the “pass/fail” aspect of the project as it can be a disincentive to student effort, engagement and learning.
To summarize the themes, graduates of Bayside High School from the Classes of 2013-2017 value the freedom and the opportunities their senior project experiences afforded them, and the communication, interpersonal and intrapersonal skills it instilled in them or helped them further develop. Various elements of the project—including topic selection, their fieldwork, and the final presentation—engaged them in learning experiences they believed were authentic and self-directed. Given their experiences and in keeping with the goals of the project, graduates concluded even more freedom should be afforded to students with respect to the projects they design and execute; however, they also agreed that students could use more guidance during some of the initial phases of the project as well as more opportunities to learn in this way earlier in their high school careers. Finally, graduates felt that some elements of the project along with some other required academic tasks during senior year could be eliminated to make students’ experiences with the project less stressful and more meaningful.
Chapter V: Discussion of the Findings

Revisiting the Problem of Practice

Teachers and administrators in the researcher’s high school, referred to as Bayside High School throughout this study, extol the virtues of senior project: how it challenges each student in a different way, how it provides them with an opportunity to pursue their own interests, and how it makes the senior year more meaningful and focused. When introduced to the project, juniors are told it “builds a bridge between the skills [they] learn in the classroom and the real world” (Bayside High School, 2017, p. 2) and that the “element of choice is what really lends meaning to the Senior Project, and it is what makes it so unique” (p. 3). They are told to “dare to dream” and to choose a topic in which they are truly interested for that will make all the difference (p. 7). Over the years, these claims have been supported, to some extent, by anecdotal evidence from a handful of graduates returning on holiday or summer breaks; however, no formal study has ever been conducted to verify these perceptions about the value of the senior project especially with respect to these claims of authentic, self-directed learning and if, indeed, it helped them successfully cross that “bridge” to their lives after high school.

As the researcher’s school district pursues a K-12 initiative to provide students with more opportunities for deeper learning (Martinez & McGrath, 2014), the senior project stands as the most well-established and significant project-based learning experience in which all students must participate and complete successfully. Deeper learning seeks to develop in students the ability to direct their own learning, set goals, monitor their own progress, and reflect on their own strengths and areas for improvement, ultimately, making them more adaptive than their peers who are not provided with opportunities to learn through self-direction (William and Flora Hewlett Foundation, 2016). These goals echo the aims of the senior project itself; still, it is a
project about which the district knows very little with respect to what this learning experience is really like for students and how it benefits them as individuals when they leave high school to face the challenges of college, career, and life itself. Thus, the purpose of this study was to better understand what recent high school graduates took with them of value from their project experiences; the extent to which these experiences engaged them in authentic, self-directed learning; and how they feel the project can be improved to better serve students in this way in the future.

**Review of Methodology**

This qualitative study examined the senior project at Bayside High School through the eyes of recent graduates. To meet the purpose outlined above, the study was framed by the following research questions:

1. What do high school graduates perceive they have gained from their participation in the senior project and how do they perceive these gains as of value to them, while in school and in their lives after high school?

2. How did elements of the senior project in keeping with authentic and self-directed learning contribute to their engagement and learning in the project?

3. Given the desired outcomes of the project as put forth by the school, how do high school graduates believe senior project could be redesigned to have a greater impact on students’ experience and learning both during and after high school?

As such, this study investigated how graduates perceived their senior project experiences and how these perceptions can be used to enhance the experiences of the students who follow in their footsteps both at the researcher’s own high school and other schools.
To achieve the goals of this study, the researcher selected his own suburban district in which a senior project has existed for 20 years. The research design included focus group discussions with graduates from the Classes of 2013-2017 who had successfully completed the project during their senior year at Bayside High School. The focus group discussions provided the graduates with the opportunity to share their experiences and discuss what they saw as benefits and drawbacks unique to their own projects and the project itself. Also, the focus group discussions allowed graduates to reflect on the nature of their experiences with respect to their own recollections and those shared by other participants. Through the focus group format, the participants engaged in an informal dialogue, built on each other’s comments, and shared their opinions with the researcher and one another. In this way, the researcher situated himself in the worlds of his subjects in an effort make their worlds and their shared and unique experiences visible with the hope of better understanding them (Denzin & Lincoln in Snape & Spencer, 2003). Additionally, the researcher conducted two personal telephone interviews.

After conducting the focus groups, the researcher had a professional archivist transcribe the discussions and interviews. He then coded and analyzed the transcription data, using a two-cycle process of in vivo coding followed by axial and pattern coding to better develop and identify the emerging themes as reviewed by the researcher, resulting in a more coherent expression of shared experience and consequences in relation to the research questions (Saldana, 2009). The researcher also reviewed and analyzed student handbooks, project calendars, and the webpage published by the senior project between 2011 and 2017, along with other documents to better understand the similarities and differences between participants’ experiences as the project evolved over this time period. Finally, through careful review and analysis, the researcher developed findings from the identified themes.
In the following sections of this chapter, the researcher presents a discussion of major findings, a discussion of findings connected to the theoretical framework, a discussion of findings aligned with the literature review, final analysis, the significance of the study, recommendations and implications for practice, limitations, and considerations for future research.

**Discussion of Major Findings**

After careful review of the themes that emerged from data collection and review in Chapter Four of this study, three major findings surfaced including:

1. The Bayside High School senior project contributes to students’ positive personal growth and future success through the deeper learning skills it fosters and engages.

2. The intrinsic value of the Bayside High School senior project derives from the power and agency it affords students, two critical elements that should be further encouraged, supported and expanded as the project moves forward.

3. More opportunities for self-directed, authentic learning like senior project should be made available to students earlier in their academic careers at Bayside High School so they can become proficient in the deeper learning skills necessary to succeed in life after high school.

**The Bayside High School senior project contributes to students’ positive personal growth and future success through the deeper learning skills it fosters and engages.**

Throughout the focus group sessions and personal interviews, graduates emphasized the personal growth they experienced as a result of their senior projects. Participants highlighted gains in their cognitive, interpersonal and intrapersonal skill sets, pointing to all the major elements of the project—i.e., developing a project and finding a mentor, fieldwork, the research
paper, and final presentation—as enabling and driving this growth. Deeper learning competencies include mastery of academic content and critical thinking and problem solving (i.e., cognitive), effective communication and collaboration skills (i.e., interpersonal), and learning how to learn and developing an academic mindset (i.e., intrapersonal). Graduates reported positive gains in all six of these areas due to their senior project experience. Deeper learning competencies have been deemed essential for acquiring the transferable skills needed to succeed in the 21st century (National Research Council, 2012; Schneider & Vander Ark, 2014). As such, the senior project can be viewed as contributing to graduates’ future success.

Table 5.1

*Themes from Research Questions One and Two Relevant to Major Finding One*

<table>
<thead>
<tr>
<th>Research Question One</th>
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<tbody>
<tr>
<td>● Graduates value the opportunity to select and explore a topic about which they are passionate or in which they are interested.</td>
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</tr>
<tr>
<td>● Graduates value the future opportunities for which the project prepared them and/or made possible.</td>
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</tbody>
</table>
Research Question Two

- Choosing their own topics, determining the focus of their own research papers, selecting their own mentor and designing their own fieldwork allowed students to take control of and direct their own learning.

- Fieldwork allowed students to explore personal or career interests and “learn through doing” in authentic, hands-on settings alongside an experienced mentor.

- Fieldwork and the final presentation often resulted in tangible products or authentic performances that were meaningful to students and demonstrated their learning.

- Fieldwork and final the presentation caused students to communicate their ideas, experiences and learning in authentic settings.

- Allowing students to choose their own topics, determine the focus of their own research paper, work with a mentor and design their own fieldwork caused students to be accountable for their choices and actions.

- The mentor selection process, research paper and fieldwork called upon students to solve problems and overcome setbacks.

- Researching and writing the paper, engaging in fieldwork, and delivering the final presentation called upon students to acquire and/or demonstrate skills they found useful in the real world.

**Cognitive competencies.** Throughout the focus group sessions, graduates emphasized the opportunities they had to build on their content knowledge through their research and fieldwork and the fact that they were frequently called upon to think critically and problem solve during their senior projects. According to participants, these cognitive elements of their personal growth and deeper learning stemmed from the fact that they were able to choose the topic and focus of their project. All the graduates in the focus groups said they chose a topic about which they were passionate or in which they were interested. In most cases, these topics were areas in which participants had some previous experience and knowledge through previous classroom and/or life experience. Researching and writing the paper called upon
students to acquire new information and knowledge they sometimes found interesting and useful (William and Flora Hewlett Foundation, 2013). In particular, some participants noted the personal interviews they conducted as part of their research as being informative and eye-opening experiences for them which they could connect back to their own classroom or life experience. Still, engaging in their fieldwork and learning from and with their mentors proved to be the most compelling deeper learning experiences for students. Working in a hands-on setting with a beekeeper enabled one graduate to expand her knowledge and understanding of the environment; participating as a student school committee representative taught another more about local government and policymaking; and co-teaching a civic literacy class taught a participant more about immigration, the citizenship process and the need for civic education.

Additionally, graduates said the mentor selection process, research paper and fieldwork called upon them to think critically to solve problems and overcome setbacks. In many cases, finding a mentor was not easy for students, forcing them to identify available information and data about local experts or practitioners in a particular field, and the process often required them to search beyond their first choice, causing them to refine the selection process as needed based on available data (William and Flora Hewlett Foundation, 2013). Similarly, the research and writing process caused students to evaluate, integrate, and critically analyze multiple sources of information and, in some cases, reason and construct justifiable arguments in support of a thesis. Finally, fieldwork pushed students to apply tools and techniques specific to a content area to gather necessary data and information and to monitor and refine their work in the field with a mentor as needed (William and Flora Hewlett Foundation, 2013).

**Interpersonal competencies.** Likewise, graduates shared a variety of ways in which they were called upon to collaborate and communicate effectively during their senior project
experiences. According to participants, these interpersonal elements of their personal growth and deeper learning stemmed primarily from their fieldwork and final presentations in authentic settings. Most graduates said working with an experienced mentor in the field was their primary form of collaboration, although some said their fieldwork experiences themselves required collaborative activities and behaviors. Designing their fieldwork with their mentor required students to identify group goals, identify necessary resources and potential obstacles—i.e., time, travel, etc.—and plan the various steps and stages of their work together. Additionally, many participants said their fieldwork called upon them to complete tasks and solve problems successfully with or with the help of their mentors, sometimes being called upon to communicate their own point of view with respect to a specific task or goal (William and Flora Hewlett Foundation, 2013). With respect to communication, graduates reported that their work with their mentor frequently required them to listen carefully to and incorporate feedback from him or her (William and Flora Hewlett Foundation, 2013). In some cases, effective communication with others extended into the very nature of a student’s fieldwork. Composing a jazz piece with a music instructor required one graduate to communicate (and understand) complex concepts through her oral discussions with him; helping to choreograph a school musical made one student listen to and incorporate feedback from her mentor after she had worked with students on a particular number; and shadowing a saltwater fly fishing guide made one participant reflect on and structure information and data he received from his interactions with his mentor in meaningful ways (William and Flora Hewlett Foundation, 2013).

For many graduates the final presentation of their senior project experience was another instance upon which they were called upon to communicate effectively their experience with
the project to a group of adults. Senior Board Presentations are delivered to a panel of faculty and community judges on an afternoon during which only the seniors are in Bayside High School and the underclassmen have been sent home. The final presentation requires students to communicate the creation and development of their projects, the nature and scope of their research and fieldwork, the link between the two, their learning stretch, and their reflections on how the project will influence their future learning endeavors. Each 8-12 minute presentation is followed by a five-minute question and answer period during which students must address and respond knowledgeably to judges’ questions, providing constructive and appropriate feedback (Bayside High School, 2017). This authentic task called upon students to exhibit deeper learning through communicating complex concepts to others in an oral presentation, structuring information and data in meaningful and useful ways, and tailoring their message for an intended audience (William and Flora Hewlett Foundation, 2013).

**Intrapersonal competencies.** Additionally, most of the graduates pointed to their senior project experiences as opportunities for them to self-direct their own learning—i.e., learning how to learn—and develop positive attitudes and beliefs about themselves as learners—i.e., developing an academic mindset. According to participants, these intrapersonal elements of their personal growth and deeper learning grew from many components of the project, including its development, the research paper, fieldwork and working with a mentor, and final presentation. As with the cognitive deeper learning benefits of the senior project, the personal growth stemming from its intrapersonal elements begins with the fact that students choose their own topics, select their own mentor and design their own fieldwork, and determine the focus of their research papers. In this way, participants said they were called upon to set a goals, monitor their progress towards these goals, and revisit and revise their approach as needed to successfully
achieve them (William and Flora Hewlett Foundation, 2013). This element of personal choice and self-direction caused students to value this intrapersonal element of their senior projects because they were allowed to take control of their own learning. Along with this feeling of control, according to the graduates in the focus groups, comes a sense of personal responsibility and accountability for their choices and actions related to their projects calling upon them to monitor their understanding, recognize when they become confused or stymied, deconstruct these obstacles, and choose effective means to work through or around them (Hewlett Foundation, 2013). In many cases, participants also reported that, at certain times during their projects, they had to refocus, apply the lessons they learned, and regain momentum until they reached their goal (William and Flora Hewlett Foundation, 2013). The participant who secured access to an organ in a church closer to her home upon which she could practice, the young man who put himself in a unique and uncomfortable situation alongside homeless people on the streets of Washington, D.C., and the young woman who forged new relationships with faculty members in an effort to improve the high school’s advisory program all experienced this type of deeper learning.

Building upon these positive intrapersonal experiences, graduates further reported they developed positive attitudes and beliefs about themselves as learners that encouraged them to persevere and prompted them to engage in other productive academic and personal behaviors in college (William and Flora Hewlett Foundation, 2013). These feelings included self-confidence and pride with respect to a difficult task well done, again, most often at the end of their projects with respect to the successful completion their fieldwork and final presentation. Participants also reported they trusted more in their own capacity and competence as a result of their project experiences, saying the project allowed them to better understand how work they did in high
school benefited them afterwards and to have more confidence that their learning at college will build upon it, ultimately supporting their future endeavors (William and Flora Hewlett Foundation, 2013). In part, this can be attributed to the fact that graduates often said their projects resulted in tangible products or authentic performances that were meaningful to them and demonstrated their learning and that they valued the time the project afforded them to reflect on themselves and their own learning and personal growth.

In the focus groups and interviews, graduates described and highlighted numerous instances of deeper learning the senior project fosters and engages. These findings point to the development of a foundation of cognitive, interpersonal and intrapersonal competencies which study participants said led to (or, in the case of members of the Class of 2017, will lead to) success in their lives after Bayside High School. Most significantly, participants said their experience working closely with an experienced, adult mentor in a professional, authentic setting and the relationships they formed with him or her served them well at the college level. As a result, they felt their interactions with professors and other older adults were easier and more comfortable after high school, sometimes leading them to feel a strong sense of belonging within their new learning community and to value engagement with others, knowing that learning is a social process (Hewlett Foundation, 2013). Participants from the Classes of 2013-2016 also said they valued the internships and job opportunities for which the project prepared them and/or made possible, further strengthening their trust in their own capacity and competence and their feeling of a strong sense of efficacy at a variety of academic tasks at which they expect to succeed (William and Flora Hewlett Foundation, 2013).

The intrinsic value of the Bayside High School senior project derives from the power and agency it affords students, two critical elements that should be further
encouraged, supported and expanded as the project moves forward. Throughout the focus group sessions, graduates emphasized how much they valued the opportunity to take control of and direct their own learning with which the senior project afforded them. Participants highlighted the freedom, choice, ownership, self-confidence, and pride they experienced, pointing to all major elements of the project—i.e., developing a project and finding a mentor, fieldwork, the research paper, and the final presentation—as the source of these feelings. From these findings it is clear to the researcher the true value of the project derives from how it empowers and gives agency to students, two integral features of the project that facilitate and enhance their personal growth and success in the future. As such, graduates not only said these opportunities need to continue to be offered to students at Bayside High School in the future, but also they must be more actively encouraged, supported and even expanded with respect to the timing, focus and form of student’s project.
### Table 5.2

*Themes from Research Questions Relevant to Major Finding Two*

<table>
<thead>
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<th>Research Question Three</th>
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<tbody>
<tr>
<td>- Give students more freedom with respect to focus, structure, form and timing of major components of project, making it more authentic, self-directed and meaningful.</td>
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<tr>
<td>- Provide more guidance and direct support in framing project, finding a mentor, selecting paper topic and determining the scope of paper.</td>
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<tr>
<td>- Eliminate steps in project from which students derive little value but require inordinate time and effort—i.e., “busy work”—or feel are repetitive.</td>
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<tr>
<td>- Take some things “off the plate” of students who are already spread thin during senior year and replace it with the project to help relieve stress and already overburdened schedules.</td>
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<tr>
<td>- Review the “pass/fail” aspect of the project as it can be a disincentive to student effort, engagement and learning.</td>
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**Power.** Graduates emphasized the benefits and importance of the choices they had to make during their projects and how these choices empowered them, making them feel proud, confident, responsible, and self-reflective. Participants said this power emanated primarily from the fact that they were allowed to explore a topic about which they were passionate or in which they were interested. These choices and decisions are productive and enabling experiences for students and allow them to better understand themselves as individuals or, as Barker (2004) describes it, “the condition of being a person and . . . [how we] come to experience ourselves” (p. 194). These ideas of power and subjectivity are best summed up in the words of a graduate who worked with a saltwater fishing guide, pursuing a longtime passion of his: fishing. Ultimately, he found that being able to share his passion about the topic, through his conversations with his mentor and other seniors as well as his final public presentation, was important to him and who he was as an individual:

The thing I value the most from senior project is the fact that, well, the project as a whole sort of gave me a platform to share with other students and other people, sort of this hobby and passion that I have, that I never really talked about much. But senior project, like with the presentation and the creation of a paper and just the fact that, you know, everyone’s doing a senior project and everyone’s talking about their senior project with other people, sort of gave me a platform to, in the presentation, sort of formally present my findings and things that I found through my fieldwork. It sort of allowed me to open up and explain more about fly-fishing to people, like my friends, who I just thought would be like, “Oh, they’re not interested in hearing about it.”

This young man’s sentiments were reflective of those expressed by most of the study participants with respect to these key elements of the project, emphasizing the personal satisfaction (“it
allowed me to open up and explain”) surrounding a project that they were allowed to choose, initiated and construct themselves as well as the feelings of empowerment (“gave me a platform”) they derived from it. Additionally, graduates agreed that the fact that what they chose to do for their projects resulted in a learning experience that they could see benefiting them in the future was important to them as individuals. This idea is best reflected in the words of a participant who worked with a cardiologist studying the health risks of e-cigarettes: “I think, personally, the opportunity to choose any topic you want was really exciting . . . The opportunity to really get hands-on experience in a field that you’re interested in, that was a really great takeaway for me. I think just getting the firsthand experience, seeing what it’s like in a clinical setting, in a hospital setting was important for me.” This young woman, who is now studying for a career in medicine, clearly valued the experience she created for herself (“was really exciting . . . was really important for me”) as well as the transference (“takeaway”) of these feelings, learnings and experiences to future endeavors. Or as another graduate, who worked on the psychology of video games for his project, put it more simply: “The interesting part of senior project . . . is what sticks.”

Agency. Furthermore, graduates said the freedom they were given resulted in them feeling as though they were thinking for themselves and acting independently in ways that allowed them to take control of their own learning in meaningful ways (Barker, 2004). This demonstration of agency, according to participants, not only was reflected in their ability to choose their own topics, determine the focus of their own research papers, select their own mentor and design their own fieldwork, but also stemmed from their learning in authentic, hands-on settings alongside an experienced mentor. This combination of independence and learning-by-doing is best reflected in the experience of one graduate who helped choreograph a
high school musical for her senior project; she told her focus group that she learned the most when she was left alone to choreograph one particular dance number:

Yeah, I definitely learned a lot from it because when someone else is there as a leader also, like [my mentor] was there with me, you kind of tend to rely on someone who’s older or who has more experience than you. But by being alone, I didn’t second-guess myself as much. I still did, but not as much as I would have, if I was not alone . . . That was very nerve-wracking for me, but also [laughs] I had to trust myself that I knew what I was doing. Up to that point, I had learned enough from her through being in [the school’s theater club] for the past three years. I had learned enough to be able to do it on my own by then.

Her sense of her own agency is clear (“I had to trust myself that I knew what I was doing . . . I had learned enough to do it on my own by then.”) having learned to rely on herself instead of her mentor as her fieldwork progressed. And through this experience, just like many other participants in this study, she came to understand herself and her abilities better (“I had learned enough to be able to do it on my own by then.”) through what Barker (2004) describes as “the existential experience of facing and making choices” (p. 5). This sort of self-affirmation and personal reflection that many graduates experienced during their project is also evident in the words of one participant who took the power and agency with which the project provided her in a purposefully different direction. Saying that she was a “little burnt out” academically by the time she reached her senior year at Bayside High School, she said she chose learning to surf for her project because, “I really just wanted to do something just for me, that I had never done before.” She described her experience on the water as transformative:
Looking back on it, it’s been a few years now, I remember feeling a tremendous sense of balance when I took the time to surf every week. I hadn’t really done anything for myself very much in high school. I just remember studying so much all the time and being kind of stressed in high school, which is kind of silly looking back. But I remember when I was learning how to surf, I would just sit in the water for hours and, even if it was a day when there wasn’t a lot of waves, I really just learned to be more patient with myself, and how to relax a little bit, and to take some time for myself, which is definitely not what was expected out of the senior project.

Every participant in the focus groups did not experience quite this level of learning and introspection from their chosen projects—i.e., “I remember feeling a tremendous sense of balance . . . I really just learned to be more patient with myself, and how to relax a little bit, and to take some time for myself.”; however, most placed value on the opportunities their projects afforded them to take control of and direct their own learning—no matter what forms it took—in a variety of ways.

**Encouragement and support.** Although graduates said they valued the freedom and independence the project allowed them as seniors in high school, they concluded that more guidance and direct support at the beginning of key phases of the project—framing project, finding a mentor, selecting paper topic and determining the scope of paper—would have been helpful and allowed them to make better choices and work more effectively on their own. The project is introduced to seniors at Bayside High School late in the spring of their junior year through an audio-visual presentation by one of the project coordinators during a class period in the school library. At this presentation they are provided with an overview of the project and its basic requirements, hard copies of the project calendar and pages from the handbook relevant
to topic selection and the project proposal/letter of intent, and electronic access to the entire senior project handbook. A concurrent presentation is also provided to the parents of rising juniors in the evening. Most students then had the summer to frame and develop their projects, making sure they adhered to the three core restrictions of the senior project: it must be legal and appropriate, receive parental approval, and represent a learning stretch for each student (Bayside High School, 2017). Although participants said these presentations were useful, many agreed that a better understanding of the reality of the project ("what it’s actually going to be like") and what the project would require from them with respect to their personal investment of time, commitment, and engagement as their projects unfolded would have been helpful, allowing them to make better more informed choices and to be more confident in executing their projects overall. In particular, graduates reported that finding an experienced, adult mentor was often a difficult and frustrating task and that they could have received more proactive encouragement and support from the project coordinators regarding this important step in developing their project.

Participants also said part of their frustrations stemmed from the fact that this was the first time to they were called upon to do something and make choices like this in their careers at Bayside High School. One graduate who worked with a local journalist to develop and publish his own underground news magazine captured these sentiments the best, explaining that more initial guidance would help students choose projects in which they were more invested and, ultimately, to which they were more committed:

I think if there was some way there could be more support at the start of the project for students who aren’t sure what they want to do for their senior project, that would be really helpful, because when you have a project that you’re super passionate about, you
don’t mind doing the work, and you’re really engaged with it through the entire process. But I had some friends who didn’t really know what to pick, and I can see how that could lead to a lot of frustration down the road when you’re asked to do all this work and you don’t really want to do it or you don’t really know how to do it. And so if there was some way that, you know, more students could find something they’re passionate about, I think it would help with a lot of issues down the road.

The importance of students’ personal investment in and commitment to their projects also drove graduates’ discussion of how they would have benefitted from more support and guidance when it came time to select a paper topic and determine the scope of their paper.

Similar to their concerns with framing their fieldwork and finding a mentor, graduates in the focus groups said the unique nature and scope of the research and paper writing task could have also been mitigated by more direction at key times in the writing process. According to participants, the paper too often felt like an afterthought, disconnected from their fieldwork experience; they pointed to the fact that they had to choose a focus and paper topic before they had completed their fieldwork in many cases. Students must declare the general scope and focus of their paper when they submit their proposals or letters of intent in September and the research process begins shortly after that with a draft controlling or thesis statement due by early October; in contrast, completed fieldwork projects are not due until the beginning of April (Bayside High School, 2017). This schedule led to some participants saying that the required link between their paper and fieldwork felt forced and inauthentic. This disconnect and the fact that they had never been asked to tie a project outside of school with a paper they were writing inside of school, led many graduates to say that they were, ultimately,
unsatisfied with their paper topic selections and the results. One student who learned to belly-
dance for her fieldwork summed up her paper writing experience this way:

I just mean have the paper be less of an inhibited exercise . . . I think there’s ways that
students can actually have a little more self-agency than that . . . There was just this
disconnect in between the project and the field work that I think devalued both of them,
if that makes sense . . . And I felt like for me, I really had to work to make the jump
between my field work and my paper. And for some people it wasn’t even possible.

Although she ended up writing her paper on the idea of sexual agency being as important as
other types of agency for feminism to be successful, this young woman said, to her, it was not
what her fieldwork ended up being about at all. In most cases, students’ senior English teachers
are their guides for their senior project research paper—e.g., introducing them to each step in
the writing process, providing them with feedback, reading their papers, assessing their work,
etc.—and the project coordinators generally assist students with their fieldwork and any
difficulties or obstacles that may arise outside of the classroom (Bayside High School, 2017).

Still, in many cases, graduates reported being confused or unsure of what the precise focus their
paper would have and the direction it would take. One participant who ended up organizing a
young adult literature conference for her fieldwork summed her paper writing experience like
this:

I thought that being able to choose your own research topic, your own paper topic,
specifically, was a really good way of being in control of your own learning, but I also
found it a little bit overwhelming as a high schooler. Just because it was so hard to
narrow it down, and I had no idea what would make a good essay at that point. I
honestly don’t remember how much guidance we had for the thesis statement, but I feel like it should have been a lot.

Although she ended up writing an argumentative essay in which she argued why young adult literature should be taught alongside more “classic” literature in high school, she—along with many of her peers in the focus groups—was not as comfortable or pleased with the way she arrived at her final product as she had hoped to be. Other graduates realized that if they had taken their paper in a different direction they would have learned more and perhaps been more engaged in the research and writing process, contending that more initial intervention and guidance on the part of their English teachers or project coordinators would have helped them make better choices.

Expansion. Finally, given their experiences with the senior project, most of the graduates pointed to the need for even more power to be handed over to students in the shaping and execution of their projects. Specifically, participants said students should be afforded more freedom and choice when it comes to when students can begin their projects, the relationship or “link” between the paper and fieldwork, and the focus and form of both the paper and final presentation. Given the significance and integral nature of the power and agency with which the project provides students, graduates in the focus groups said it made sense to provide future students even more opportunities to truly self-direct their own learning. Allowing all students the opportunity to start their senior project fieldwork over the summer before their senior year, they said, would address concerns regarding the fact that, currently, the project is an add-on to their other responsibilities as seniors at Bayside High School. Participants recommended that other tasks or responsibilities be moved “off the plate” of students who are already spread thin during senior year to be replaced by the project to help relieve stress and already overburdened
schedules. Allowing all seniors to start the project as early as June of their junior year would begin to address this concern, according to some graduates.

Giving students more freedom and control over their writing process and the form, structure and purpose of their papers, according to participants, would eliminate some of the assignments graduates viewed as “busy work” and make their research and paper writing experience and the learning they take from it more authentic. What one graduate said about his own learning is reflective of what many participants had to say about how the learning they took from their paper could be improved:

I’ve always had troubles with a lot of things in school just in general, because I know how I learn. And some teachers are absolutely more than willing to let you learn how you learn as long as you learn the information, but a lot of the times I’ve noticed, either from friends of mine or from myself, that some teachers will just stick to their guns, teach how they teach, and if you don’t learn, sucks for you . . . So, I think if this is actually going to be a student-driven thing, students need to be able to learn how they learn best, and that choice is up to them, because no one knows how you learn better than you do.

In this light, if the current guidelines, practices, and requirements of the senior project were less rigid, students would have a more robust, genuine, and, perhaps, meaningful learning experience over all. Such increased flexibility and choice with the paper would also address participants’ concerns regarding how it and fieldwork are “linked,” creating they said, again, a more authentic relationship between two key elements of the project which to many students seem unnecessarily disconnected. As one participant told his focus group, and as other like him told theirs in different ways, “If there was some way that I could have had a little bit more freedom to tie what my fieldwork really meant to me into the paper or other things, in a way that I was choosing,
rather than trying to fulfill requirements that would have been even better.” Similarly, other graduates pointed to the overly-structured and scripted nature of the final presentation as another area in which “a little bit more freedom” would be beneficial to students when telling the story of and the learning they experienced from their projects at the end of their senior years at Bayside High School.

Ideally, if students were provided with enhanced power and agency throughout the senior project process, this would make their endeavors more meaningful and cause them to invest themselves further in the choices they make and the work they do; it would make them more likely to be confident in their capabilities “to act and to make a difference” (Barker, 2004, p. 4) and less likely, as one graduate admitted, to view the project as just “one more hurdle I had to get across.”

More opportunities for self-directed, authentic learning like senior project should be made available to students earlier in their academic careers at Bayside High School so they can become proficient in the deeper learning skills necessary to succeed in life after high school. Given the value graduates placed on the power and agency they experienced during their senior projects, it makes sense to expand the opportunities for similar types of learning experiences to underclassmen, according to several participants in the focus groups. Not only would this better prepare students to become proficient in deeper learning competencies before graduation—i.e., repeated, developmentally appropriate opportunities to demonstrate their cognitive, interpersonal and intrapersonal skills—but also, graduates said, it would provide them with necessary understanding of what the senior project is all about and greater confidence in how they can truly take advantage of the opportunities for self-directed, authentic, and, ultimately, deeper learning with which it presents them at the end of their junior
year of high school. Reflecting back on his own project, one participant echoed the views of others when he addressed this idea: “I think a lot of the time [in high school], they tell you what to do and you do it. But this project, it was giving you freedom, and that's something maybe we're no used to.” He pointed to subsequent projects he encountered in college where he had to choose his own process and product, saying, although he initially struggled with them, they ultimately helped him gain more confidence in his abilities. He concluded that if he had more experience doing this at Bayside High School, by the time he was a senior, “I would have probably picked something I was a little more passionate about [for my project]. I don't think I really had the confidence at that time to really go forth and pick something that I was truly passionate about.” These feelings, expressed by participants in different ways throughout the focus groups and interviews, point to the fact that more opportunities to practice and grow familiar with the various skills and habits of mind must be provided to students earlier in their academic careers if they are to be expected to succeed as seniors on a project that both requires them to take control of their own learning in authentic settings and, in part, determines whether or not they will graduate from high school. As another participant said, reflecting this viewpoint, “It’s just that if students had more experience picking things out for themselves and thinking for themselves about what they want to do in creating their own assignments, thinking a little bit more about ‘Why am I doing this? What might be more helpful? What do I want to change? How can I take charge of my own learning?’” Based on the deeper learning competencies the senior project tests and fosters along with the power and agency it affords students, these are exactly the types of questions students at Bayside High School should be asking themselves—when they are freshmen.
Research Question One

- Graduates value the writing, public speaking and organizational skills they gained, believing these skills will or knowing they have served them well in college and/or the future.

- Graduates value the self-confidence and pride they derived from their experiences.

- Graduates value the opportunity to work closely with an adult in a professional manner and the relationships they formed.

- Graduates value the opportunity to learn and explore outside of the normal school environment.

- Graduates value the time to reflect on themselves and their own learning and personal growth.

- Graduates value the future opportunities for which the project prepared them and/or made possible.

Research Question Two

- Choosing their own topics, determining the focus of their own research papers, selecting their own mentor and designing their own fieldwork allowed students to take control of and direct their own learning.

- Fieldwork allowed students to explore personal or career interests and “learn through doing” in authentic, hands-on settings alongside an experienced mentor.

- Fieldwork and the final presentation often resulted in tangible products or authentic performances that were meaningful to students and demonstrated their learning.

- Fieldwork and final the presentation caused students to communicate their ideas, experiences and learning in authentic settings.

- Allowing students to choose their own topics, determine the focus of their own research paper, work with a mentor and design their own fieldwork caused students to be accountable for their choices and actions.

- The mentor selection process, research paper and fieldwork called upon students to solve problems and overcome setbacks.
Researching and writing the paper, engaging in fieldwork, and delivering the final presentation called upon students to acquire and/or demonstrate skills they found useful in the real world.

Research Question Three

- Give students more freedom with respect to focus, structure, form and timing of major components of project, making it more authentic, self-directed and meaningful.
- Provide more guidance and direct support in framing project, finding a mentor, selecting paper topic and determining the scope of paper.
- Provide underclassmen with more opportunities to learn and explore outside of the normal school environment and a better understanding of what the project will ask from them.

Discussion of the Findings in Relation to Theoretical Frameworks

The researcher used authentic learning theory (Herrington & Oliver, 2000; Herrington, Oliver & Rivers, 2003) and self-directed learning theory (Knowles, 1975; Grow, 1991; Heimstra, 1999; Merriam, 2001; Gibbons, 2002, Cost & Kallick, 2004) to examine the findings of this study. He chose these theoretical frameworks because of the alignment with the research design and purpose of the study. In identifying the characteristics and developmental stages of both authentic learning and self-directed learning, the researcher provided himself with two lenses through which he could view and by which he could measure the extent to which authentic, self-directed learning contributed to the gains graduates experienced as a result of their successful completion of the senior project and the value they attribute to these gains based on or in anticipation of their lives after high school. With respect to authentic learning theory, Reeves, Herrington and Oliver (2002) determined that activities that engage students in authentic learning are: student-centered with real-world relevance; ill-defined, where tasks and subtasks need to be defined and completed; complex, to be investigated over an extended period of time, from a
variety perspectives, using multiple of resources; opportunities to collaborate and reflect; integrated and applied across different subject areas and assessments, leading beyond domain-specific competencies; those that lead to the creation of finished products valuable in their own right and allow for a number of solutions and outcomes. Similarly, self-directed learning is characterized by learners who are intrinsically motivated, set goals, identify and access learning resources, seek help when necessary, self-evaluate, work independently, and network with others (Tough, 1971; Knox, 1973; Knowles, 1975; Skager, 1979). Table 5.4 provides an outline of these characteristics:

Table 5.4
Characteristics of Authentic Learning and Self-Directive Learning Relevant to the Major Findings (Tough, 1971; Knox, 1973; Knowles, 1975; Skager, 1979; Reeves, Herrington & Oliver, 2002)

<table>
<thead>
<tr>
<th>Authentic Learning</th>
<th>Self-Directed Learning</th>
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<tbody>
<tr>
<td>● Student-centered</td>
<td>● Intrinsic motivation</td>
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<tr>
<td>● Real-world relevance</td>
<td>● Goal-setting</td>
</tr>
<tr>
<td>● Ill-defined</td>
<td>● Identify/access resources</td>
</tr>
<tr>
<td>● Complex</td>
<td>● Critical thinking</td>
</tr>
<tr>
<td>● Extended</td>
<td>● Problem-solving</td>
</tr>
<tr>
<td>● Multiple perspectives</td>
<td>● Assistance when necessary</td>
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<tr>
<td>● Variety of resources</td>
<td>● Self-evaluation</td>
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<tr>
<td>● Collaborative</td>
<td>● Reflection</td>
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<tr>
<td>● Reflective</td>
<td>● Transference of knowledge/skills</td>
</tr>
<tr>
<td>● Interdisciplinary</td>
<td>● Independence</td>
</tr>
<tr>
<td>● More than one solution/outcome</td>
<td>● Collaboration</td>
</tr>
<tr>
<td>● Products valuable in their own right</td>
<td>● Communication</td>
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Additionally, Grow (1991) found that learners engaged in self-directed learning advance through four stages of increasing self-direction: dependent, interested, involved, and self-directed.
When viewed from this perspective, the major findings of the study confirm that the senior project at Bayside High School is a valid and valued task/activity that engages students in both authentic and self-directed in learning in multiple ways and at multiple times throughout their senior year. Graduates in the focus groups reported they experienced positive personal growth through the cognitive, interpersonal and intrapersonal (i.e., deeper learning) skills or behaviors they were called upon to practice or exhibit during their projects. Specifically, the student-centered and independent nature of the project—i.e., choosing a topic, shaping a project, finding a mentor, executing their fieldwork, identifying the scope and relevance of their research paper, and delivering a final presentation in an authentic setting before a panel of teachers and community members—empowered students, to varying degrees, to make important choices about and take control of their own learning. The self-agency and intrinsic motivation participants reported or described to the researcher was more clear evidence that students value the results of these independent decisions made and actions taken in authentic settings. Additionally, the fact that participants called for underclassmen to be provided with similar opportunities for authentic and self-directed learning throughout their high school careers so that they can be better prepared for, find success with, and personally grow as a result of their projects when they are seniors indicates that they are interested, involved and, perhaps, self-directed stakeholders in the project’s future (Grow, 1991).

Finally, Grow’s (1991) Staged Self-Directed Learning Model asserts that just as learners can progress through four stages of growth with self-directed learning, teachers must as well, evolving from authority and coach, to motivator and guide, to facilitator, and, finally, to consultant as their students become increasingly self-directed. If they do not, they can be obstacles to their students’ learning despite the opportunities and opportunities a project
provides. This observation is consistent with the researcher’s finding that graduates said they wanted even more freedom for future Bayside students with respect to their senior projects complemented by additional coaching, motivation and guidance at critical stages early in the project.

Discussion of Findings in Relation to Literature Review

The literature presented in Chapter II focused on six distinct areas of inquiry: senior projects, exhibitions, project-based learning, authentic learning, self-directed learning, and deeper learning. In the section that follows, the researcher presents the findings of the study aligned with these areas. His overall conclusion is that the findings are highly consistent with the results of related research from the past.

Senior projects, exhibitions and project-based learning. Senior projects are a distinct type of project-based learning by exhibition that contribute to students’ academic and personal growth by engaging them in meaningful tasks during their final year of high school and fostering the development of college and career readiness skills and a perception of self-efficacy in their lives after high school (Summers, 1989; Cowan & Carter, 1994; Lorenz, 1999; Nicolini, 1999; Egelson, Harman & Bond, 2002; Wehrs, 2002; Rickey & Moss, 2004; Duff, 2006; Carolan, 2008; Pennacchia, 2010; Blanchard, 2012; Skeldon, 2012; Nishimura, 2014; Henning, 2016). As such, the researcher found that Bayside High School graduates who participated in the study experienced benefits similar to those reported by other researchers in the past. Participants said their experience left them with positive gains in their cognitive, interpersonal and intrapersonal abilities. Above all, graduates in the focus groups said they valued how they were empowered by the elements of choice and self-selection the project includes as well as the opportunity to direct their own learning experiences it affords them. The researcher found that these positive personal
growth experiences varied in some respects, but all of them served students well in some significant fashion in their lives after high school, primarily supporting their perceived success in college. These findings are consistent with the outcomes of project-based learning in that student interest and choice are integral to its success, positively influencing student perceptions of their learning, making it more satisfying and enjoyable (Efstratia, 2014; Hugerat, 2015).

Also integral to the success of project-based learning and, by extension, senior projects is the important role teachers and other adults play in encouraging students and supporting their needs when engaged in a complex, extended task. Gresalfi, Barnes and Cross (2012) found that teachers may need to give students insight into the content of the desired response to project-based learning in order to provide them with scaffolding and prepare them to recognize and take up the learning opportunities ahead of them. In this way, students in successful project-based learning classrooms also reported feeling more support from their teachers and significantly more positive teacher-student relationships (Lou, Tsai, Tseng & Shih, 2014; Lou, Liu, Shih, & Tseng, 2011; Asad & Barak, 2012). These findings are consistent with the researcher’s own finding that although graduates reported that they would benefit from even more freedom and choice when developing and executing the various phases of their senior project, they still insisted that students need additional guidance and support, especially in the early stages of developing their fieldwork and the focus/topic of their research papers.

Finally, the fact that many of the studies the researcher read involved middle school students or high school underclassmen engaged in effective classroom-based and schoolwide project-based learning activities (Darling-Hammond, Ancess & Falk, 1995; Davidson, 2009; Asiabanpour, 2010; Lattimer & Riordan, 2011; Lou, Liu, Shih, & Tseng, 2011; Asad & Barak, 2012; Lou, Tsai, Tseng & Shih, 2014; Hugerat, 2015) supports his finding that freshmen,
sophomores and juniors at Bayside High School will benefit from similar opportunities to practice, develop, and apply the necessary cognitive, interpersonal and intrapersonal skills prior to engaging in senior project.  

**Authentic learning and self-directed learning.** As demonstrated in the previous section, the researcher’s findings are consistent with the existing literature regarding the components and benefits of authentic learning and self-directed learning; however, as was seen in the literature on project-based learning, in particular, studies of authentic learning activities in high schools have also found that both students and teachers play an integral part in the success of authentic learning tasks. DeCastro and Cho (2005) and Hui and Koplin (2011) found that students, when first confronted by authentic learning opportunities and authentic methods of assessing their learning, were sometimes put off by newness of the experience and the amount of time it took to complete the task. Other researchers found that both teachers and students too often rely on traditional instructional methods which can lead to more traditional, less innovative expectations and preferences for both groups (Lombardi, 2007; Mantei & Kervin, 2009). As noted previously, the researcher found in his own study that confronting students with the uncertainty, ambiguity, and conflicting perspectives associated with authentic learning, learners can feel uncomfortable. To this end, Windham (2007) suggested that one way to ease these tensions is to provide students with more authentic learning experiences and to scaffold them appropriately as they progress through school. This conclusion is consistent with the researcher’s findings in his study of recent graduates from his high school.  

With respect to the literature on self-directed learning, Knox (1973) noted the value of a mentor’s role in adult self-directed learning, finding that the mentor’s role is “comparable to the teaching part of the teaching-learning transaction” (p. 19) with an emphasis on the learning part
of the transaction that includes five components: the needs, setting, objectives, activities, and evaluation of the learning and the learner him/herself. With his focus on high school graduates who had all or were about to enter the adult world of college, the researcher found a similar connection between a student’s direct engagement with an experienced adult mentor in a real world setting to be a positive influence on how a participant valued his/her senior project experience and the cognitive, interpersonal and intrapersonal skills it caused him/her to engage, develop, and/or sharpen.

**Deeper learning.** Consistent with the discussion of Research Finding One, senior project contributes to students’ positive personal growth and future success through the deeper learning skills it fosters and engages. The student data collected through Research Questions One and Two revealed significant evidence of active engagement in all six of the deeper learning competencies: mastery of academic content, critical thinking and problem solving, effective communication, collaboration skills, learning how to learn, and developing an academic mindset (William and Flora Hewlett Foundation, 2013). Although some participants indicated their comfort level and proficiency with certain competencies were still developing during their senior year in high school, in the focus groups all reported significant gains relevant to the cognitive, interpersonal and/or intrapersonal elements of their individual experience.
### Crosswalk of Themes from Recent Graduates in Response to Research Question One with Deeper Learning Competencies (William and Flora Hewlett Foundation, 2013)

<table>
<thead>
<tr>
<th>Deeper Learning Competencies</th>
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<tr>
<td>1. Master core academic content (Themes B, E)</td>
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<tr>
<td>2. Think critically and solve complex problems (Themes B, E)</td>
</tr>
<tr>
<td>3. Work collaboratively (Themes D, E)</td>
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<td>4. Communicate effectively (Themes B, D, E)</td>
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<tr>
<td>5. Learn how to learn (Themes A, B, C, D, E, F, G)</td>
</tr>
<tr>
<td>6. Develop academic mindsets (Themes A, B, C, D, E, F, G)</td>
</tr>
</tbody>
</table>

A. Graduates value the opportunity to select and explore a topic about which they are passionate or in which they are interested. (5, 6)

B. Graduates value the writing, public speaking and organizational skills they gained, believing these skills will or knowing they have served them well in college and/or the future. (1, 2, 4, 5, 6)

C. Graduates value the self-confidence and pride they derived from their experiences. (5, 6)

D. Graduates value the opportunity to work closely with an adult in a professional manner and the relationships they formed. (3, 4, 5, 6)

E. Graduates value the opportunity to learn and explore outside of the normal school environment. (1-6)

F. Graduates value the time to reflect on themselves and their own learning and personal growth. (5, 6)

G. Graduates value the future opportunities for which the project prepared them and/or made possible. (5, 6)
Table 5.6

Crosswalk of Themes from Recent Graduates in Response to Research Question Two with Deeper Learning Competencies (William and Flora Hewlett Foundation, 2013)

<table>
<thead>
<tr>
<th>Deeper Learning Competencies</th>
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<tbody>
<tr>
<td>1. Master core academic content (Themes A, B, C, G)</td>
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<tr>
<td>2. Think critically and solve complex problems (Themes B, E, F, G)</td>
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<tr>
<td>3. Work collaboratively (Themes B, D, G)</td>
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</table>

A. Choosing their own topics, determining the focus of their own research papers, selecting their own mentor and designing their own fieldwork allowed students to take control of and direct their own learning. (1, 5, 6)

B. Fieldwork allowed students to explore personal or career interests and “learn through doing” in authentic, hands-on settings alongside an experienced mentor. (1-6)

C. Fieldwork and the final presentation often resulted in tangible products or authentic performances that were meaningful to students and demonstrated their learning. (1, 6)

D. Fieldwork and the final presentation caused students to communicate their ideas, experiences and learning in authentic settings. (3, 4)

E. Allowing students to choose their own topics, determine the focus of their own research paper, work with a mentor and design their own fieldwork caused students to be accountable for their choices and actions. (2, 6)

F. The mentor selection process, research paper and fieldwork called upon students to solve problems and overcome setbacks. (2, 5)

G. Researching and writing the paper, engaging in fieldwork, and delivering the final presentation called upon students to acquire and/or demonstrate skills they found useful in the real world. (1-6)

Still, in their study of eight high schools that value such skills and pursue deeper learning, Martinez and McGrath (2014), found that all of the schools sought to: establish cohesive,
collaborative learning communities; empower and encourage students to become more self-directed, creative, and cooperative; make curricula more engaging, memorable, and meaningful by establishing relevance to real world concerns; read outside classroom walls; form partnerships with businesses, organizations, and colleges and universities; inspire students by endeavoring to understand that their talents and interests, customizing learning whenever possible; and incorporate technology purposefully to enhance learning (p. 15). All of these schools featured various elements included in the Bayside High School senior project—e.g., student-selected topics, research-based writing and critical thinking, exploration in the real world, working with a mentor, high stakes presentations of value and learning, etc.—but at a cultural and institutional level not as a stand-alone project done once during a student’s time at school as is the case with the researcher’s school.

Indeed, the major findings of this study suggest that more project-based learning experiences like the senior project are necessary for students to build the deeper learning “muscles” they will need to make the heavy cognitive, personal, and interpersonal “lifts” that, by the time they are seniors, the project will require of them. For example, students at the Avalon School in St. Paul, Minnesota, are encouraged to identify and pursue their own personal passions and interests as freshmen with Project Brainstorm. In fact, when looking at the blank faces of incoming 9th graders when they are asked “What do you want to learn?” and “What do you want to do better?”, one of the school’s teachers reported “I don’t think many of them, if any of them, have ever been asked those questions” (Martinez & McGrath, 2014, p. 23). This focus on freshmen is also seen at the Science Leadership Academy in Philadelphia, Pennsylvania, where during a weeklong orientation called Summer Institute, 9th graders are put in small, collaborative groups and head into the city to conduct research, ask questions, collect facts, and make
observations about several public spaces or institutions—e.g., the public library, train station, etc.—concluding with a public presentation of their findings. They receive only occasional coaching from teachers and upperclassmen and are introduced in an authentic way to the school’s core values of inquiry, research, collaboration, reflection, and presentation (Martinez & McGrath, 2014). For upperclassmen, schools like High Tech High School in San Diego and Impact Academy in Hayward, California, require students to demonstrate their independence, initiative, learning and personal growth. High Tech High offers students the opportunity to use 20 percent of their school day to do whatever they choose as long as it benefits the school in a meaningful way. This practice emphasizes two key cultural elements: the importance of independent learning for students and the need to contribute to the greater good of the school community as a whole. At Impact Academy, sophomores and seniors must document, explain and present their learning through a Benchmark Portfolio and a College Success Portfolio. Each student selects three exhibits from his or her portfolio taken from the last two years of their work at the school and defends them in front of teachers on an Oral Defense Committee (Martinez & McGrath, 2014).

The same is true when considering schools in the deeper learning networks identified by the William and Flora Hewlett Foundation. Vander Ark and Schneider (2014) found specific strategies employed across the schools targeting the deeper learning competencies in all the three domains running concurrently throughout the school’s cultures, curricula, and structures. Schools like Casco Bay High School in Portland, Maine, require students to complete several interdisciplinary Learning Expeditions during each of their first three years of high school which take them beyond the school walls into the real world. For example, when learning about the coal mining industry, students travelled to Appalachia and interviewed members of the community
involved in the industry and volunteered for Habitat for Humanity while “on Expedition,”
ultimately creating online biographies of their interview subjects to share with them. The
school’s principal said these projects are “inherently motivating and intense” encouraging
underclassmen to confront “topics that force investment of both head and heart” (Vander Ark &
Schneider, 2014, n.p.). Seniors at Casco Bay design their own Learning Expedition in which they
research a topic of concern to them and take action in the community to make a positive impact
on the condition or situation (Vander Ark & Schneider, 2014). At the International School of the
Americas (ISA) in San Antonio, Texas, underclassmen work with seniors to coordinate, host and
lead the largest Model United Nations in the United States; students manage a $30,000 budget
and communicate with hotels, caterers and the media for the three-day event attended by more
than 1,000 teachers, students and guests from other schools. Students also engage in week-long,
grade-level travel experiences outside of Texas aligned with Advanced Placement standards,
some participating in international learning opportunities at partner schools in China, Japan,
South Korea, Sweden and Mexico (VanderArk & Schneider, 2014). Finally, MetEast High
School in Camden, New Jersey, requires students to complete four quarterly exhibitions which
culminate in authentic student presentations demonstrating their work towards mastering each of
the schools four learning goals and increasing in time from 30 minutes each for freshmen to 90
minutes for seniors. Each student’s emphasis on empirical reasoning, quantitative reasoning,
communication, social reasoning, and personal qualities culminates with an individualized
Senior Thesis Project which both interests the student and benefits the community. Smaller
versions of the project are required in grades 9-11 (Vander Ark & Schneider, 2014). In each of
these Deeper Learning Network schools, the expeditionary, collaborative, or personalized
learning students do is tightly aligned to its vision for student learning and is reflected in its culture as a whole.

Given these exemplars, although the senior project at Bayside High School does engage students in meaningful deeper learning, the researcher finds that it has much work to do with respect to instituting a curriculum and culture that consistently empowers and provides agency to students on a regular, systematic basis throughout all four of their years at the school.

**Conclusion**

The purpose of this qualitative study was to identify and describe what recent high school graduates perceive they gained from their successful completion of a senior project and how these gains may be or were of value to them in their lives after high school. Also, the researcher sought to understand how the authentic, self-directed, and elements of the project contributed to participants’ deeper learning, and how the project might be redesigned in the future to better serve future students’ experience with the project and the learning they take with them from it.

The study was designed to understand the following questions:

1. What do recent high school graduates perceive they have gained from their participation in the senior project and how do they perceive these gains as of value to them, while in school and in their lives after high school?

2. How did elements of the senior project in keeping with authentic and self-directed learning contribute to students’ engagement and learning in the project?

3. Given the desired outcomes of the project as put forth by the school, how do recent high school graduates believe senior project could be redesigned to have a greater impact on students’ experience and learning during and after high school?
To achieve the goals of this study, the researcher chose a single site, the high school at which he is a teacher leader and which has had a senior project in place since 1998. The site is referred to as Bayside High School throughout the study. The researcher gathered data at the school using focus group discussions and personal interviews with a mix of graduates from the Classes of 2013-2017, as well as document analysis of the senior project website, handbooks, and calendars. The researcher transcribed the data, engaged in a multi-step coding process, and developed resulting themes. Finally, the researcher analyzed the themes aligned with authentic learning theory (Harrington & Oliver, 2000) and self-directed learning theory (Gibbons, 2002) and relative to a review of the literature.

After a thorough analysis of the evidence and literature, three major findings emerged. First, the Bayside High School senior project contributes to students’ positive personal growth and future success through the deeper learning skills it fosters and engages. Next, the intrinsic value of the Bayside High School senior project derives from the power and agency it affords students, two critical elements that should be further encouraged, supported and expanded as the project moves forward. Finally, more opportunities for self-directed, authentic learning like senior project should be made available to students earlier in their academic careers at Bayside High School so they can become proficient in the deeper learning skills necessary to succeed in life after high school. These major findings address the research questions outlined above.

Significance of the Study

Teachers and administrators at Bayside High School have praised the school’s senior project for 20 years: how it challenges students, providing them with an opportunity to pursue their own interests, and demonstrate their research, writing, collaborative, and public speaking abilities. Community members who serve as judges for student senior board presentations return
year after year and praise the program and the students whose portfolios they review and then watch present. Teachers and administrators from other school districts travel to participate as well with the goal getting a look at the project up-close and, perhaps, bringing it back to their own schools.

When introduced to the project, juniors are told it “builds a bridge between the skills [they] learn in the classroom and the real world” (Bayside High School, 2017, p. 2) and that the “element of choice is what really lends meaning to the Senior Project, and it is what makes it so unique” (p. 3). They are told to “dare to dream” and to choose a topic in which they are truly interested for that will make all the difference (p. 7); however, despite the time and effort they put into the project, there is no formal effort to find out if these claims are accurate. No one talks to the kids. Three weeks after they successfully complete their projects by delivering the final Senior Boards presentations, they graduate and leave. Some of these graduates do return on college or summer breaks and they often report how much the project helped them, especially with writing college papers; however, this information is anecdotal, without any formal, deliberate collection of data, analysis or synthesis.

This study marks the first time in its history that Bayside High School’s senior project has been put under the microscope to see if these claims and promises are accurate according to the students to whom they are made. It is the first time student’s opinions and voice have been sought out in a formal study of how they believe the project benefitted them in their lives after high school and how they think it can be improved to be even more beneficial for future seniors. The results of this study will be shared with school and district administrators; the members of the school committee and the project’s steering committee, a board composed of teachers, administrators, students, a parent liaison, and a school committee member; and, most
importantly, with the current student body and parents. It is the researcher’s hope that the major findings of the study will influence and help drive positive change for the project, making it an even more valuable authentic, self-directed, and deeper learning experience for students in the future.

Beyond this local significance, the researcher believes this study is also important to other educators who seek to engage students in meaningful, project-based learning experiences like the senior project. The study’s themes and major findings concur with recent findings regarding the effectiveness of providing students with opportunities to take control of and construct their own learning (Merriam & Bierema, 2014). Other researchers have found that project-based learning initiatives, like senior project, engage students in learning that improves their academic skills, contribute to a stronger sense of their self-efficacy and self-direction, make their senior year more engaging, and provide students with greater confidence with respect to their pursuits after high school (Heimstra, 1999; Gibbons, 2002; Newell, 2003; Duff, 2006; Pennacchia, 2010; Blanchard, 2012). Although recent studies have explored the benefits of authentic, self-directed learning opportunities like senior project on students who are in high school, few have focused solely on recent high school graduates and their perceptions of the benefits that such opportunities provide them in their postsecondary pursuits (Pennacchia, 2010; Nishimura, 2014). Reflecting back on their learning experiences from the perspective of their lives after high school, graduates are in a better position to report on how the benefits they experienced from their senior projects transferred effectively with them to college, etc. This transference of skills is critical to determining the lasting value and effectiveness of such project-based learning initiatives which result in deeper learning (Martinez & McGrath, 2014).

Specifically, from an intrapersonal perspective, it is important to consider and better understand
how students extend the trust in their own capacity, competence and efficacy that they developed as a result of their senior projects in their lives after high school and if they continue to see themselves as academic achievers who expect to succeed in their learning pursuits (William and Flora Hewlett Foundation, 2013).

Recommendations

After careful review of the research findings, the researcher offers the following recommendations for his district and high school leaders to consider. Although these recommendations are specific to the researcher’s situation, he will clarify their implications for practice along with those of his major findings for educators and researchers at schools which currently provide senior projects or similar project-based learning initiatives and those that do not. The need for learning experiences like this one and the careful consideration of the time, support, freedom, and preparation with which educators provide their students as they seek to deepening their learning is, he believes, universal:

1. Allow all students to begin their senior projects during the summer before their senior years if they choose.

2. Provide additional support and guidance for students when they develop their projects, search for a mentor, and focus their research papers and link them to their fieldwork.

3. Restructure the project so that students complete and reflect on their fieldwork before they choose a topic for their research papers.

4. Give students more freedom with respect to the type, structure and creation of their papers, allowing them to follow a writing process that reflects how they learn best and to link their fieldwork to their research and writing in more meaningful and
authentic ways.

5. Give students more freedom with respect to the form and structure of their final presentations, allowing them to communicate their learning experiences in more meaningful and authentic ways.

6. Require freshmen, sophomores, and junior “projects” that model and reflect the various components of the senior project and better prepare underclassmen to take full advantage of the authentic, self-directed and deeper learning opportunities and challenges with which they are presented as seniors and in their lives after high school.

Allow all students to begin their senior projects during the summer before their senior years if they choose. Traditionally, the mantra of the senior project at Bayside High School is that it is, specifically, a senior project to be completed during a student’s final academic year. This is true mainly due to the belief that the project makes students’ final year of high school more meaningful and, to some extent, helps combat senioritis—i.e., disengagement from academic study, etc., especially during the second semester. The researcher does not dispute these claims, although he did find that due to several factors—e.g., the pass/fail aspect of the project, the lack of choice and freedom with the research paper and final presentation, etc.—some participants still reported feelings and behavior that smacks of senioritis. The words of one graduate reflect this reality: “The reason I didn’t really thoroughly enjoy it was because it was just a means to an end,” she told her focus group. “And it was like, ‘I just have to do this to graduate. This is one more hurdle that I have to get across.’” Still, the researcher believes that providing students with more time to develop and execute their fieldwork by instituting an “early start” option, traditionally only available to special education students or those graduating early,
for all seniors would allow them more power and agency with respect to the choices they make, and the time and the actions they take, ideally leading to more personal investment and extended engagement.

The researcher grounds this recommendation in the nature of the experience several participants described when telling the stories of their fieldwork. Like the graduate whose fieldwork was teaching civic literacy classes to recent immigrants who ended up co-teaching the class for “much longer” than the required hours and went on to teach “several other classes” with the same organization. Or the graduate who is now studying to be a physical therapist who found an unlikely connection between her passion—a “what I want to do with the rest of my life kind of thing”—and the hours of conversation she had with veterans at a local home where she was working with her mentor to design a war memorial for them and their fallen comrades. And finally, the young woman who made time regularly for hours of peace and self-reflection sitting on her surfboard: “I remember feeling a tremendous sense of balance when I took the time to surf every week . . . I would just sit in the water for hours . . . even if it was a day when there wasn’t a lot of waves.” These fieldwork experiences all point to what Csikszentmihalyi (1990) describes as an optimal experience in which individuals experience flow, “a sense that one’s skills are adequate to cope with the challenges at hand, in a goal-directed, rule bound action system that provides clear cues to as to how one is performing” (p. 71). According to Csikszentmihalyi (1990), optimal experiences are purposefully designed so individuals require learn, achieve goals, receive feedback, and exert control. Flow also takes time, and the senior project needs to provide students with more of it to help them achieve this goal.

The “early start for all” option also addresses graduates’ concern that the senior project is an “add on” to their senior year with no other requirements or responsibilities removed from
their “plates” during a busy first semester which includes college visits, applications, and other activities, etc. Although it does not remove any other work or responsibilities from their schedules, it does expand them, providing more room to plan and execute a worthwhile project that reflects a personal interest or passion. As another graduate concluded, addressing the project timeline in its current form: “If someone asked me what I should do for a senior project,” he said, “I’d probably say pick something easy because you’ve got a lot going on in your senior year.” And pick a sympathetic mentor . . . And that’s not the kind of advice that I think you or the other people who would create senior project want us to give.”

**Provide additional support and guidance for students when they develop their projects, search for a mentor, and focus their research papers and link them to their fieldwork.** The researcher found the freedom and choice the senior project gives to students are the twin engines that drive the vehicle. The power and agency students experience as they make these choices and take independent action are both critical to the success of the project; however, due to its current “stand-alone” nature—i.e., students are not allowed or asked to make choices or given freedom of this magnitude and scope elsewhere in their high school careers—some graduates reported they did not feel fully prepared to take advantage of the opportunity with which the project presented them. Finding an experienced, adult mentor seemed to be a particular challenge for some participants while others found they needed more help in focusing their research paper topics so that they connected to their fieldwork in more meaningful ways. As one graduate said, finding the right mentor was a major source of stress for her: “I think, for me and a lot of people, because there’s just, like, someone else. And there’s always—especially if it’s someone you’re unfamiliar with—it’s, you know, you’re asking them to do something, and you don’t know their enthusiasm level, and you just don’t know the best person.” This is not to
suggest that students be provided with mentors or even a list of mentors as one participant proposed; however, it is clear to the researcher at this stage in the school’s development with respect to project-based, deeper learning, students who have never been asked to do something before cannot be asked to do so for the first time as a graduation requirement without more initial help and guidance, if they feel as though they need it. The challenge of the project will not be diminished; indeed, it may be enhanced by the additional confidence and direction students take with them and the doubt and stress they leave behind. As one participant said, “If there was some way there could be more support at the start of the project for students who aren’t sure what they want to do for their senior project, that would be really helpful, because when you have a project that you’re super passionate about, you don’t mind doing the work, and you’re really engaged with it through the entire process.”

**Restructure the project so that students complete and reflect on their fieldwork before they choose a topic for their research papers.** Just as freedom and choice are the twin engines that drive the senior project, fieldwork is the wheels on the vehicle that, ultimately, take students to places of personal interest, value and deeper learning. This understanding emerged from the focus group discussions and interviews and the researcher believes the project should be restructured to exploit it. Traditionally, students identify possible topics for their research paper in their project proposals or letters of intent (September) and research and write their papers during the remainder of the first semester (October-January). In the current project model, once their project is approved by the project’s steering committee, students have until the beginning of April to complete their fieldwork. Although this structure allows students flexibility with their fieldwork, the project calendar more rigidly controls when the paper will be written regardless of a student’s learning experience in the field. Many participants noted this caused frustration and a
disconnect between the two components of the project for them; according to one graduate, “If there was some way that I could have had a little bit more freedom to tie what my fieldwork really meant to me into the paper, in a way that I was choosing, rather than trying to fulfill requirements, that would have been even better.” In the project model the researcher is proposing, students would begin their fieldwork at the end of their junior year and must complete it by the end of the first semester of their senior year. At that point, after reflecting back on their fieldwork experience and their learning, they will propose a research paper topic that builds on, extends or is informed by that learning in a substantive and meaningful way. They would research and write their papers during the month of February and the faculty would read the final (third) drafts in late March for final approval. In this way, the project would be moving closer to what one participant said it should be: “Instead of having the student have to mold their project to fit the senior project,” she said, “I think it should be something that’s a little bit more fluid that your project, the paper and the presentation, and all that, goes with your project.”

Give students more freedom with respect to the type, structure and creation of their papers, allowing them to follow a writing process that reflects how they learn best and to link their fieldwork to their research and writing in more meaningful and authentic ways. Following upon the previous recommendation which serves to provide a more authentic link between a student’s fieldwork and research paper, students should also be allowed more choice with respect to the type of paper they write and the research/writing process they follow to achieve this goal. The researcher contends that the paper should still be research-based as graduates said that this element of the paper—i.e., finding appropriate and credible sources, understanding and synthesizing the relevant information from them, organizing and integrating this information into a paper, and writing and revising it—served them well in college. Still, just
as every student’s fieldwork is not the same, neither should the research paper they produce to extend and build upon their learning experience. Currently, students can write an informational research-based report on a topic related to their fieldwork or they can write an argumentative research-based essay. This binary choice does not reflect the range of possible directions students may want to take their extended inquiry once their fieldwork is completed. As one graduate said, “I would recommend giving students more options to do non-academic forms of writing, such as journalism, letters to representatives, and speeches. I feel that this would go well with the project's ethos of real-world experience.” With guidance, students could select the form of paper that best fits their experience and how they want to express their learning and to whom; for example, students could pick from an expanded “menu” of types of writing and make a case to support their choice given their purpose as researchers and writers seeking to extend their learning beyond their fieldwork. Similarly, the required steps in the writing process should be driven by each student’s needs as a learner and writer. A graduate who participated in the model “accelerated” paper writing process during the 2016-2017 school year in which certain requirements were made optional based on student needs said the process better suited her approach: “We sort of skipped over stuff that sort of inhibits you from feeling like you’re controlling your own learning,” she told her focus group. Although the researcher believes certain required steps in the process should be maintained, considering the struggles some participants reported in framing and organizing their papers (i.e., thesis development, outlining, drafting and revising with peer and teacher suggestions for improvement), many should be made optional. It is the researcher’s belief such a step would also address concerns voiced by many graduates regarding the “busy work” they felt compelled to complete during the writing process (i.e., source information sheets, etc.).
Give students more freedom with respect to the form and structure of their final presentations, allowing them to communicate their learning experiences in more meaningful and authentic ways. In the same way that the senior project paper process should be amended to further empower students and promote their agency, the requirements for the final presentation should also be less restrictive. Many participants point to their Senior Boards presentations as an experience they valued with respect to the confidence and pride it instilled in them as well as how the experience of speaking to a group of adults better prepared them for the public speaking challenges they encountered in their lives after high school; however, at the same time, graduates said the required elements of the presentation embedded in the formulaic outline students were encouraged to follow felt less authentic and more “cookie cutter.” As one participant said of her experience, “They wanted you to talk freely about it . . . But they still wanted like [thumps table twice] things in order.” The project outline is divided into specific sections each reflecting an element or aspect of a student’s project in a distinct sequence—introduction, research paper, fieldwork, link, learning stretch, self-reflection and future implications, and a conclusion with a thank you to the judges. In between these sections, students are advised to include transitions as well as incorporate the use of technology, an audio-visual aid, or artifact somewhere in the presentation. The rubric English teachers use to evaluate the students’ presentation outline is similarly structured, resulting in an assessment that evaluates how well each student follows the assignment as written (Bayside High School, 2018). This rigid process does not work for many students, according to participants: “I felt like I had to almost make things up to fit the timeline, to fit what is required of me,” said one graduate. When asked by the researcher how she would make the presentation more valuable, she responded, “I think that having it less structured than it is . . . That was the hardest for me, to explain my entire
experience.” Like the paper, the required 8-12 minute presentation at the end of each student’s senior year should be an experience that allows students to express their learning in the manner in which they feel best suits their needs and purpose as learners. Although it is an important component to the project and its goals—i.e., it is the final hurdle students must clear in order to successfully “pass” their projects—it should be one that presents them with a more genuine opportunity to tell their own story of their projects, their learning, and their personal growth.

Require freshmen, sophomore, and junior “projects” that model and reflect the various components of the senior project and better prepare underclassmen to take full advantage of the authentic, self-directed and deeper learning opportunities and challenges with which they are presented as seniors and in their lives after high school. The researcher found that senior project is certainly a worthwhile and beneficial example of project-based learning through his discussions with graduates regarding their personal experiences with it. The previous recommendations all seek to build upon what these participants told him would help make the project a stronger, more effective opportunity for authentic, self-directed learning at Bayside High School. Still, if the project continues to exist as a stand-alone requirement for seniors only, the voices of the participants in this study will not be fully heard. The assertion that students would benefit from having more senior project-like experiences as underclassmen is best reflected in the words of a young woman who worked with a beekeeper for her fieldwork:

I thought this would be a good opportunity kind of to learn more about the environment. But I feel like if I was younger, maybe like a freshman or sophomore, I feel if you had mini-projects where you could go out into the community and do something interesting that we liked, and then kind of report back on it, I feel that'd be a lot more interesting and beneficial for students to express what they learned and what they liked about it. It kind
of just gets them more out and about . . . So, then when senior project comes, you're like, "Okay, I kind of have a feel how to do this" . . . Even if you did something and you didn't like it, then you could totally shift, but you'd still have that experience.

These “mini-(senior) projects” should be developmentally appropriate and progressive. The freshman project should meet students where they are at as 9th graders with respect to their previous experiences with authentic, self-directed learning and advance them through a deliberate, organized, process of beginning to develop and practice the cognitive, interpersonal and intrapersonal learning skills they will need to succeed in the future. For example, during the second semester of their freshman year, students can choose a research-based project that pursues an area or issue of personal interest—e.g., What do you want to learn more about? What matters to you? The project would require them to include information to both secondary and primary research—e.g., interviewing a local practitioner or expert in the field, attending a public lecture or presentation related to their topic, etc.—and producing a more formal research or less formal I-search paper where students can write in the first person, etc. The freshman project would conclude with a short, 4-5 minute presentation of each student’s “major findings”—e.g., What I learned, how I learned it, and why it’s important to me—before an audience of their former teachers from the middle school. This would not only allow students to experience the research process in a more personally-relevant way as freshmen, it would also get them out into the community and help them see that print and electronic texts are not the only relevant and accessible sources of information. Finally, the freshman project would conclude with an authentic opportunity for students to share their learning with an audience invested in their ability to do so and with whom they are familiar but may not be completely comfortable—i.e., their sixth, seventh, and eighth grade teachers.
The sophomore and junior projects would build upon this foundation of deeper learning skills and expand it. For example, sophomores could work together in collaborative teams to address a problem or an issue the Bayside community faces. These teams would identify, research, evaluate, propose, and implement a solution during their sophomore years. They would work collaboratively with other students and local stakeholders during and after school throughout the process, ultimately presenting their solution to a related local governmental body or citizens group and participate in its execution. The junior project could follow a similar model but be individual in nature and wider in its scope and potential impact—e.g., identify a statewide or national problem or issue and have students develop a research-based solution they implement and deliver to an authentic, real world audience of their own choosing using various forms of media to suit the purpose and audience for which they are intended.

This is not to suggest that the researcher believes the senior project become a four-year endeavor with students choosing a topic as freshmen and then thinking, researching, communicating, and pursuing it again and again throughout their high school experiences; it could happen like that for a student, but it would be solely dependent on his or her own continued, passionate interest in and engagement with a particular topic or issue—i.e., he or she would have to choose to do so. Instead, it is to ensure that there is an established, deliberate process of preparing students to more fully benefit from and value their senior projects both on a cultural and personal level.

The previous five recommendations all address purposeful, structural improvements to the project, the kind that optimal experiences require (Csikszentmihalyi, 1990). Additionally, an individual’s “internal conditions” and his or her ability to “restructure consciousness” are just as important when planning opportunities for flow (p. 83). Csikszentmihalyi (1990) points to
anxiety and boredom as the two key obstacles to achieving flow at the personal level. Both of these barriers, which participants reported in discussing their own senior project experiences, can be overcome by providing younger students opportunities to develop, strengthen, and train the deeper learning “muscles” that project-based learning requires. Anxiety can be dispelled by allowing freshmen, sophomores, and juniors to experience authentic, self-directed learning in a developmentally more appropriate way, experiencing more independence and agency as they grow and mature as learners (i.e., "Okay, I kind of have a feel how to do this"). According to graduates, boredom often resulted in students not challenging themselves with their senior projects, taking the easy way out of (or around) its requirements. This boredom can be addressed by providing younger students with structured opportunities to explore and/or discover their passions and interests in real world settings outside of school (i.e., “go out into the community and do something interesting that we liked”).

Implications for Practice

The major findings of this study also have more far-reaching implications for high school redesign and K-12 curriculum reform on a state and national level. Providing students with opportunities for personal growth and deeper learning and making them powerful agents in their own growth and learning are not things that should be reserved for one group of students at one time during their academic careers—i.e., senior project; instead, these opportunities for authentic, self-directed learning should be embedded throughout their school experiences and in the curricula they encounter throughout their K-12 journey.

High school redesign. Through his focus group discussions and interviews with 27 graduates of his high school, the researcher found that senior project is a powerful force for positive personal growth and future success through the deeper learning skills it fosters and
engages. In particular, students’ fieldwork experience outside of the classroom/school allowed them to engage in authentic, self-directed learning experiences while working with an adult mentor exploring a field or topic in which they were personally interested. In this way and others, personal choice and independence are the primary engines that drive a student’s project, affording them the power and agency “to take control of and have a powerful voice in their own education and development both as learners and individuals” (Bayside High School, 2017, p. 2).

It is clear to the researcher that all students should be provided with opportunities like these both for the immediate cognitive, interpersonal, and intrapersonal gains they will experience and for the resulting positive impact on their lives after high school and the opportunities which they pursue or with which they are presented.

However, the personal growth, power and agency that project-based learning initiatives like senior project deliver to students should not be restricted to their senior years of high school. Indeed, the principles of authentic learning and self-directed learning should infuse each step in an underclassmen’s personal learning journey throughout his or her high school experience. The literature demonstrates that students learn best when engaged in real-world, complex problem-solving that is meaningful to them (Herrington & Oliver, 2000). Learning activities and projects with these characteristics cultivate transferable, portable skills in students and engage them in the practice of disciplinary thinking and reasoning (Lombardi, 2007). Additionally, students who are consistently encouraged and allowed to take control of and direct their own learning become more interested, involved and responsible for their learning (Grow, 1991). For students like these, learning becomes more meaningful and relevant to them in their lives beyond school (Costa & Kallick, 2004). In short, if senior project and other, similar project-based learning initiatives are so effective at providing students with opportunities to learn like this, why do
many high schools, including the researcher’s own, make students wait until their senior years to engage in one?

Indeed, the major findings of this study suggest that more project-based learning experiences like the senior project are necessary for students to build the deeper learning “muscles” they will need to make the heavy cognitive, personal, and interpersonal “lifts” that, by the time they are seniors, the project will require of them. At the Avalon School in St. Paul, Minnesota, seniors conclude their learning with a yearlong project that culminates in a 30-minute presentation to a panel of teachers and an outside expert of the student’s choosing. Students begin their experience at the school with Project Brainstorm in which freshmen are encouraged to identify and pursue their own personal passions and interests. Incoming 9th graders are asked to ponder and respond to questions like “What do you want to learn?”, “What do you want to do better?”, “What are you good at?” and “What do you know?” (Martinez & McGrath, 2014, p. 23). In this case, the culminating senior project is a direct extension of a student’s first day at the school. And the effort to develop students into deeper, more self-directed learners at Avalon does not stop with Project Brainstorm; it’s just beginning. Martinez & McGrath (2014) noted this commitment to a learning continuum when studying Avalon and other schools committed to deeper learning:

[H]elping students become responsible for their own learning is an incredibly challenging task that cannot be accomplished by any individual teacher acting alone. What is demonstrated vividly through Avalon and the other schools is the power of a learning community to transform students’ lives when a culture exists that values relationships, trust, and respect and simultaneously presses students consistently to do their best—by the setting of high expectations, and the support and encouragement
needed to meet them—through a collective responsibility for learning. (p. 25)

In this way, senior project can become a powerful capstone to a student’s learning experience, but these projects and the students who undertake them will only be as powerful as the learning experiences and opportunities that preceded them.

Similar to the Avalon School, Casco Bay High School in Portland, Maine, builds each student’s high school experience upon the belief that the school is first and foremost a community of learners engaged in self-directed inquiry. Principal Derek Pierce described his school as “a community of learners where the wonderful in each student is known and nurtured, where learning is catalyzed by student inquiry and academic adventure, and where every graduate is prepared for college, work, and citizenship” (Vander Ark & Schneider, 2014, n.p.).

The school requires students to complete several interdisciplinary Learning Expeditions during each of their first three years of high school which take them beyond the school walls into the real world. Underclassmen “On Expedition” experience “inherently motivating and intense” project-based learning and are encouraged to confront “topics that force investment of both head and heart,” according to Pierce (Vander Ark & Schneider, 2014, n.p.). Halfway through their lives at Casco Bay, students are expected to demonstrate their learning and personal growth in their Sophomore Passage Presentation. In addition to their growth as individuals and learners, Sophomore Passage gives each student an opportunity to develop their presentation skills, and share their own talents and unique expressions of themselves. This “gateway” experience at the end of each student’s sophomore year of high school requires a 15-minute presentation that indicates “substantive reflection” before a panel of students and staff. One year later, juniors at Casco Bay considering the focus and design of their own yearlong senior Learning Expedition in which they research a topic of concern to them and take action in the community to make a
positive impact on the condition or situation (Vander Ark & Schneider, 2014). Like Martinez & McGrath (2014), Vander Ark and Schneider (2014) point to successful deeper learning schools like Casco Bay as having developed a culture of learning and also to their leadership, even in schools not originally conceived around deeper learning:

For leaders working in existing schools that were not purpose built, there is still an opportunity for them to become purpose-led by meaningfully engaging the staff and the community in developing and building a plan around a vision for Deeper Learning outcomes. School-wide adoption of Deeper Learning strategies and practices takes leadership. The profiled schools have an unusually high number of school-wide agreements. These are not schools where teachers are freelancing; they may have autonomy but they work together within a shared frame with common strategies and practices. (p. 28)

In this way, project-based learning activities that lead to personal growth and deeper learning throughout a student’s high school career build upon a shared, focused, and consistent foundation inside the classroom and beyond it.

Beyond the scope of deeper learning studies, non-traditional programs like Iowa BIG have placed authentic, self-directed learning at the forefront of the student experience in unique ways. The Iowa BIG school engages juniors and seniors from several Cedar Rapids, Iowa, schools in intensive, real-world projects that stem from the needs of the community and local partnerships (Malloy, 2017). Students spend part of each school day working in the field engaged in collaboratively-designed projects about which they are passionate and which engage them in solving local problems and exploring opportunities in their communities. The school’s website describes its mission, in part, declaring, “We must provide students with as many contextually-
rich experiences as possible so they not only develop basic skills, but, more importantly, they can competently use those skills to solve real problems and make new things happen” (About, 2017). Student projects must meet three requirements: students are passionate about the project, it is interdisciplinary, and has a participatory third party audience. The last requirement “is the hardest and most important core value” of the Iowa BIG model according to project coordinators: “If we can’t identify an audience outside of the school’s walls willing to participate, assess, and mentor the project, we don’t do it. This goes beyond having an evening where students show off their work, it goes beyond having a professional Skype in for a class period—our students become fully integrated into solving a need of the community” (About, 2017). One of the school’s founders, Trace Pickering, said students perform at the same level as their counterparts in more traditional high schools across the state on standardized assessments, but cited studies done by the school that demonstrate Iowa BIG students experience stronger intrapersonal growth through their involvement in the program: “Students at BIG have dramatically higher levels of resilience, efficacy, ownership of their learning, and a stronger sense of what they want to do and who they are” than students in other local high schools (Unger, 2016). In this way, these students high school experiences are purposefully structured around a series of personally meaningful project-based learning activities rooted in the community in which he or she lives, driving them to learn at a deeper level in authentic, real-world settings.

Avalon, Casco Bay, and Iowa BIG are just three examples of what high schools can and should be for all of their students, all of the time. The researcher contends that secondary schools should be wholly redesigned, grades 9-12, to better serve students with learning experiences that better prepare them for and serve them in their lives after high school.
K-12 curriculum reform. Just as there is no good reason to restrict the benefits of authentic, self-directed, project-based learning opportunities to seniors in high school, there is no good reason to restrict these practices to high school students either. Schools in the William and Flora Hewlett Foundation’s Deeper Learning Network demonstrate that students in K-8 schools benefit from curricula, instruction and assessments rooted in these principles as well. Bate Middle School in Danville, Kentucky, emphasizes project- and inquiry-based learning for students in grades 6-8. All 6th graders complete group defenses of their learning in math/science and English language arts/social studies, and, as 7th and 8th graders, they individually defend their learning in these disciplines. Additionally, all students participate in formal performance-based assessments with both internal and external scorers and observers present throughout each of their years at Bate (Vander Ark & Schneider, 2014). Like Casco Bay High School, Sussex Academy in Georgetown, Delaware, pursues an expeditionary learning approach for its students in grades 6-9. Every student participates in the school’s science fair along with three other expeditions based on real-world problems, requiring students to understand the issue, critique past solutions and propose their own. Students prepare portfolios of their expeditionary learning experiences which they present publicly to their peers, parents, and members of the community (Vander Ark & Schneider, 2014).

For even younger students, curricula at the K-8 Odyssey School in Denver, Colorado, includes an Adventure Program in which outdoor adventure activities get progressively more challenging and build upon the previous years’ experiences. Activities are consistent by grade level and, according to the school’s website, “Etiquette for the Kindergartners includes leaving a place better than they found it, quiet voices, respect for wildlife/habitat, use of restroom, staying with the group, etc. This repeating theme becomes more complex, culminating in the 7th and 8th
grade with weather watching, observation of human impact on the land, and may include service work to offset negative human impact” (Adventure, 2018, n.p.). Through the program, students in grades K-8 reach personal goals, build confidence, collaborate with others, and become more experienced learners and leaders (Adventure, 2018). The school’s executive director, Marcia Fulton, said the Adventure Program at Odyssey “harnesses children’s natural passion to learn and helps them develop the curiosity, knowledge, skills, and personal qualities they need for a successful adulthood” (Vander Ark & Schneider, 2014, n.p.). Similarly, all students at the K-5 Walter Bracken STEAM Academy in Las Vegas, Nevada, participate in three field excursions every year into the surrounding community and environment correlating to the appropriate grade level science curricula. Principal Katie Decker said, “Experts from the community provide information and assistance as students are immersed in real-world applications. For example, ecologists from Las Vegas teach fourth grade students to conduct field research using real desert tortoise habitats” (Vander Ark & Schneider, 2014, n.p.). Every grade level is also responsible for farming a plot in the school’s vegetable garden and students organize and run a farmer’s market to sell the school’s crops.

In light of what these and other K-12 schools are doing with respect to redesigning themselves and their curricula, the researcher concludes that robust deeper learning experiences embedded in authentic, self-directed learning opportunities are attainable for all students at every grade level as long as a school and its leadership are willing to deliberately make these initiatives part of its daily culture and instructional ethos. As Patricia Oliphant, Head of School at Sussex Academy concluded, maintaining “active engagement” is a full-time commitment: “This is not a ‘sit and get’ school,” said Oliphant, “it is a school where the student is a worker and teacher is a coach” (Vander Ark & Schneider, 2014, n.p.).
Validity of the Study

To ensure that the results of this study are valid, the researcher included a broad range of more and less recent graduates of Bayside High School with several members of each of the graduating Classes of 2013-2017 participating in the focus groups and interviews. Prior to these discussions, the researcher informed the participants of the purpose of the study as well as reminded them of his positionality. He assured the participants of their anonymity and verified that their participation is in no way evaluative. Since, in most cases, graduates were in focus groups with at least one peer who graduated with them in the same class, most participants either reported or demonstrated through their interaction with the researcher and other participants that they were comfortable in freely responding to and interacting with all of those present. Further, the researcher clarified his biases and outlined the research propositions before the start of the study.

In addition, he engaged in member checking to ensure the accuracy of the data collected and co-constructed during and at the conclusion of each focus group or interview and, after the transcriptions were completed, by the sharing them with each group of participants for validation (Birt, et. al., 2016). The researcher also followed the researcher guides and questions to ensure the validity of the data collected. So as not to prejudice his selection of participants—i.e., students he may had taught while they attended Bayside High School—he solicited all members of each graduating class by using the school’s databases of parent and student contact information with the permission of the superintendent of schools and the help of the school’s technology specialist. (In the case of members of the Class of 2017, only seniors who were or would be 18-years old at the time of the study were contacted.) He selected every participant who expressed interest in participating in the study based on this initial contact; although of the
50 graduates who initially responded affirmatively, only 27 actually participated in the focus
groups or personal interviews due to previous commitments or unforeseen circumstances. Of the
27 graduates who participated, 15 were former students of his; however, none had been under his
direct supervision for more than a year since the study was conducted. In the researcher’s
opinion, this relationship did not influence the tone, content, or candor of these participants’
engagement with him or the other members of the focus groups.

Limitations of the Study

The findings of this study are limited to the boundaries of this research, namely the small
suburban, New England high school/district referred to as Bayside throughout. This study
included only one district and focused primarily on that district’s one high school, thus limiting
the ability to transfer the findings. In using a qualitative approach and prioritizing student voice,
it is important to note that the researcher contacted or attempted to contact all students who
graduated from this high school between 2013 and 2017, excluding those members of the Class
of 2017 who were not 18-years old at the time of the study. With respect to contacting less recent
graduates, the researcher had to rely on parents or guardians forwarding the study information
and invitation to their sons or daughters.

The fact that more than half (15) of the 27 participants in the study were former students
of the researcher may be considered another limiting factor of the study; however, of these 15
participants, only three were members of the Class of 2017 and they had not been under the
researcher’s direct supervision for more than a year or more in all cases—i.e., they were not in
one of the researcher’s classes as seniors and the researcher had no power over their assessments,
grades, etc., at the time of the study. Furthermore, of the 12 remaining participants who were the
researcher’s pupils, more than half of them (7) were three or more years removed from their
experiences at Bayside High School, further nullifying any influence the researcher may have possibly had over them.

Additionally, since the study targeted the researcher’s high school and, specifically, the experience of its students when they were seniors, the results of the study may not generalize to other grade levels or building configurations with respect to the impact of project-based learning experiences like the senior project. Additionally, the results may not generalize to districts or schools that differ in makeup or performance because this district and school fall within the boundaries of high-socioeconomic and high-performance status with low teacher and student mobility.

Finally, of the 27 participants in the study, 26 had attended, were attending or were planning on attending four-year colleges; one participant was attending a two-year community college. This distribution somewhat reflects the most recently available student data for the Bayside High School Class of 2017 with the respect to the large percentage of students attending a four-year college—i.e., 84% of graduates went on to attend a four-year college, 5% went to attend a two-year college, and 11% went on to other schooling (Bayside High School, 2017); however, the researcher could not include enough representatives who either planned on or were attending two-year colleges and/or those who pursued other education or work opportunities. This was not intentional on the researcher’s part, but it is another limitation of his study. The distribution of graduates and their post-high school plans was more diverse among the 50 members of the Classes of 2013-2017 who expressed initial interest in participating in the study; however, only 27 of these individuals ended up actually participating.
Future Research Considerations

Given these limitations, the researcher believes that similar studies be conducted in school districts with different demographics, socioeconomic settings, number of high schools, etc., so as to better determine if the gains reported by graduates from his small district with only one high school are consistent with senior project programs in other more diverse and/or urban and/or larger settings.

Additionally, as this was a qualitative study of high school graduates who graduated over a five-year span, the researcher recommends a similar study but with a quantitative approach to better measure how participants’ distance from graduation, the nature of their lives after high school, gender, etc., contributed to their recollections of and valuation of their senior project experiences.

Moreover, the researcher believes it would be informative to follow a small group of students through their senior project experience, from project selection to final public presentation, in a case study (Yin, 1994; Creswell, 2007). Creswell (2007) observes that “a case study is a good approach when the inquirer has clearly identifiable cases with boundaries and seeks to provide an in-depth understanding of the cases or a comparison of several cases” (Creswell, 2007, p. 74). In this way a researcher could identify students from different backgrounds, levels of academic achievement, project topics, etc., and study their senior project experience as they progress through their self-directed, authentic learning experience. With this in mind and considering how impactful he found each participant’s fieldwork experience to be, the researcher also recommends studying to what extent a student’s project and fieldwork topic or area of interest—to the extent that he/she chooses something about which they are truly interested or passionate—influences the learning he/she takes from the experience. Either of
these areas of inquiry would, the researcher believes, positively influence the development of
senior projects and similar project-based learning opportunities, particularly with respect to how
a student’s choice of project engenders deeper learning, especially with respect to his/her
intrapersonal competencies and the degree of self-efficacy and commitment to his/her project it
engenders (Zeiser, et. al., 2014).

Finally, the researcher wonders if the fact that since the Bayside High School senior
project program is distinctly located in the school’s English department, if this positionality adds
a bias to the project’s research paper requirement, the amount of curricular time currently
devoted to this major element of the project, and students’ generally negative attitudes towards
this element. As one participant said regarding her paper writing process, “We’re not idiots.
We’re all good writers. We know how to do this. We don’t need someone to hold our hands.”
What role does/should the research component of the project play, what form should it take, and
when is the optimum time or sequence in which it should be completed?

**Personal Comments**

I am very proud to have been a member of the team of educators who established the
senior project at my high school in 1998. As one of the original project co-coordinators, I worked
closely with a colleague from the math department to build, shape, and steward the project for
six years. It was the first of its kind at a public school in my state. Over that time, the project
became part of the school’s culture and identity, and educators from across the state and New
England came to get a closer look at the project and participate as judges for Senior Board
presentations, the same thing my colleagues and I did when we first visited a senior project high
school in Washington state in 1997. In my school’s most recent—and successful—application to
be named a 2016 National Blue Ribbon School by the U. S. Department of Education, my
principal described the senior project as “the bedrock of our student’s high school experience.”

My conception and belief in myself as a teacher leader and a change agent was forged by my experience leading the senior project.

I left the project, my school and the classroom in 2004 to pursue a broader high school reform agenda centered around project-based learning in a nearby urban school district; however, as that district’s high school reform facilitator I soon learned of how little vision both school and labor leaders possessed when it came to redesigning high schools to serve students better and how lethargic they could be. Disheartened and discouraged, I returned to my high school, secured my National Board Teaching Certification, developed our school’s Academic Learning Center, led our most recent accreditation self-study and site visit, developed and taught a new Advanced Placement English: Language & Composition course, and was named English department chair. But there was still something missing.

I learned of the Northeastern Ed.D. program after a discussion with my then assistant principal who is now the district superintendent. Seven years later, I am writing this final section of my thesis on a project about which I am truly passionate. Indeed, it just occurred to me that, at 51, I just finished my “senior” project. Or, at least, it feels like it.

Conducting this study has shaped me as a researcher, an educator, and an individual. I now have a stronger understanding of how the elements of research tie together and why it is necessary to follow a standard protocol. I could have informally asked current students or graduates when they return to my high school on college breaks, etc., the same questions I asked the participants in the study; however, the value of the research process I followed is that their responses in the focus groups and personal interviews are grounded in a recognized structure that provides validity and context. With the informal chats I would be getting opinions of limited,
short-term value, anecdotal information, and with this study I am getting data that relates and contributes to a larger body of knowledge with a long-term value. In my classroom, I have always valued student voice and urge my students to use their words, actions, and ideas to make a difference in their school, town, state, nation and world. Analyzing and integrating the actual words, opinions, thoughts, and feelings from 27 graduates of the high school at which I have taught for 24 years, some of whom I had in class, was a truly enjoyable experience because I knew I was giving their voices new power and efficacy as this study goes on to shape the work of other educators and researchers in the field and our work at Bayside High School. This is my hope. From a personal perspective, I am excited to be completing this study, which has been a major focus in my life for the past two years. Prior to that I raised procrastination and fear of failure to new levels. Like the participants I spoke with in this study, I now feel more confident, powerful, independent and, of course, free. My (senior) project is complete.
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Appendix A

Recent Graduate Focus Group Protocol

Part I: Introductory Question Objectives (5-7 minutes), to begin after signed informed consent is collected

Introductory Protocol

I want to thank you in advance for your time and your willingness to participate in this focus group. I am a doctoral student at Northeastern University and this focus group is part of the requirements for my doctoral dissertation. I have selected you to speak with me today because I identified you as someone with personal experience with Barrington High School’s senior project. My research project focuses on the experience of students with a particular interest in understanding how these individuals describe their experiences with senior project. Through this study, I hope to gain more insight into your experience with senior project, especially how it relates to deeper learning competencies. I hope that this will allow me to identify ways in which we can improve senior project and make it a more valuable and meaningful learning experience for students in the future.

Because your responses are important and I want to make sure to capture everything you say, I would like to audio tape our conversation today. Do I have your permission to record this focus group discussion?

Thank You. I am turning on the recording now.

I will also be taking written notes during the focus group discussion.

I can assure you that all responses will remain confidential and I will only use a pseudonym when quoting from the transcripts. As such, it is important that you not share the responses from other members of today’s focus group with people outside of this room. I will be the only one privy to the tapes, which I will eventually destroy after they are transcribed. To meet our human subjects’ requirements at the university, you must sign the form I have with me. To summarize what is in this document, it states that: (1) all information will be held confidential, (2) your participation is voluntary and you may stop at any time if you feel uncomfortable, and (3) we do not intend to inflict any harm. Do you have any questions about the focus group process or this form?

We have planned this meeting to last about 60 minutes. During this time, I have several questions that I would like to cover. If, at any time, you are uncomfortable with a question or need me to rephrase, please feel free to let me know.

First, I will begin asking you questions about you.

1. What did you do for your senior project?
2. Why did you choose this topic?
3. What are your plans for the future?
I will now ask you some questions about your senior project experience. I would like to hear about your experience in your own words. Your responses may include both academic and non-academic elements as appropriate.

4. In your own words, describe your senior project experience?
5. In what ways did you find your senior project provided you with a meaningful, real world learning experience?
6. In what ways did you find your senior project provided you with an opportunity to direct and control your own learning?
7. In what other ways did you gain from your senior project experience?
8. How did these gains serve you as both a student and an individual?
9. What did you find the least valuable or meaningful about your senior project experience?
10. What, if anything, would you change or do differently with respect to your senior project to enhance the value of your experience?
11. What about your senior project experience do you believe was/will be of the most value to your life after high school?
12. What, if anything, would you change about the senior project itself to enhance the value of your experience?
13. Do you have any additional comments/questions that you would like to share?

Thank you for your participation today and for being willing to answer my questions. I will review our focus group discussions. If I have any follow-up questions or need clarification, may I reach out to you? If you have any further questions, please reach out to me.

Thank you for your participation in this important study. I am ending the recording now.
Appendix B

Bayside High School Senior Project Handbook: Letter to Seniors

Dear Senior:

The Senior Project at Bayside High School builds a bridge between the skills you learn in the classroom and the real world. The three phases of the Senior Project are: 1) a paper on a topic of your choice; 2) fieldwork with a mentor relevant to this topic; and 3) a formal presentation before a panel of judges in which you will communicate and reflect on your experience as a whole.

Because the Senior Project is such an important part of your senior year, we have created an online handbook especially for you. It contains all the information you will need to choose and complete a Senior Project that will be both successful and fulfilling. Almost any topic is open to you—as long as it is legal, appropriate, demonstrates a learning stretch, and meets your parents’ approval. Ask yourself, what have you always wanted to know more about or to learn how to do? What career or personal interest do you want to explore? If you choose your project carefully, your experience should be exciting and challenging.

This element of choice is what really lends meaning to the Senior Project, and it is what makes it so unique. As project coordinators, we are not going to “give” you a topic. Instead, we are giving you this online handbook that outlines the expectations and requirements your Senior Project must meet. We will also give you our continuous support and guidance throughout the year to help make your project as excellent and exciting as you want it to be. Your English teacher will also be there to help you succeed, and the entire high school faculty will offer you support and encouragement.

As you know, the Senior Project is a graduation requirement. This means you must successfully complete a Senior Project in order to graduate with your class in June in accordance with School Committee policy and section 5 of the Board of Regents’ High School Regulations of 2003 and Section L-6-3.2 of the 2016 Board of Regents’ High School Regulations. In the event that you do not successfully complete this project, you will be allowed to do so after your peers graduate and receive your diploma upon its completion.

We will keep you informed and up-to-date on Senior Project deadlines and requirements throughout the year. Primarily, we will use the Senior Project Twitter account to do this. Sign in to www.twitter.com and follow us @BHSSeniorProj. You will also be made aware of this information in your English classes.

Give serious thought to your Senior Project, and enjoy the challenges your choices will bring you. We are proud to join you and the rest of the Class of 2017 on this journey, and look forward to helping you along the way. If you have any questions or concerns, please stop by the Senior Project Office in the library or send us an e-mail. We will be happy to help you. Good luck!
Appendix C

Bayside High School Senior Project Handbook: Project Calendar

Senior Project Calendar 2016-2017

Semester One

Wed., June 15
Due: Early Start: Letter of Intent: I.E.P., early graduation, special circumstances

Mon., Aug. 8
Early Start: Letter of Intent: all seniors eligible (rolling dates for acceptance of Letter of Intent between August 8 and September 16)

Thurs., Aug. 25
Submitted Letters of Intent returned

Wed., Aug. 31
Senior Project Handbooks online tutorial (library)

Thurs., Sept.1
Topic Selection/Letter of Intent Workshop (2:20-3:00 in library)

Sept. 6-Sept. 9
Preliminary Research: 2 days in library (S.P.S./plagiarism)

Mon., Sept. 12
Topic Selection/Letter of Intent Workshop (2:20-3:00 in library)

Fri., Sept. 16
Due: Letter of Intent and Mentor Information/Parental Acknowledgement Form
Students who do not have their Letter of Intent in by this date cannot participate in any extracurricular activities until the assignment is completed.

Mon., Sept. 19
Letters of Intent read by Steering Committee

Wed., Sept. 21
Letters of Intent returned for revision or placed in electronic portfolio

Mon., Sept. 26
Due: Revised Letter of Intent (if necessary)

Sept. 26-Sept. 30
In –Class Library Research: Due: S.I.S. on Fri., Sept.30

Wed., Oct. 5
Due: Draft Thesis/Controlling Statement and Sign of Commitment

Thurs., Oct. 13
Due: Revised Thesis/Controlling Statement

Wed., Oct. 19
Due: Research Notes (S.I.S.) and Introduction with Final Thesis/Controlling Statement

Thurs., Nov. 3
Due: Annotated Outline, Bibliography and Interview Evaluation Form

Tues., Nov. 22
Due: First Draft of Senior Project Paper (Google Classroom)

Nov 28-29
One Peer Critique in class/ One day “Yes test” workshop

Fri., Dec. 2
Due: Peer Critique Form/ First Draft Submission to turnitin.com

Wed., Dec. 7
Mandatory Advisory Board meeting for any student who has not submitted the first draft of the Senior Project Paper.

Tues., Dec. 20
Due: Second Draft of Senior Project Paper (Google Classroom)
Students who do not have their Second Draft of the Senior Project Paper in by this date cannot participate in any extracurricular activities until the
assignment is completed.

Wed., Jan. 4  Parents/guardians of any students who have not submitted the second draft of the Senior Project Paper will be called.

**Senior Project Calendar 2016-2017  Semester Two**

Jan. 30 – Jan. 31  Senior Project Boot Camp: Senior Project Paper (2:20-3:00 in room library)

Wed., Feb. 1  **Due:** Final Copy of Senior Project Paper (Google Classroom)

Mon., Feb. 6  Faculty Senior Project Paper Reading In-Service Day

Fri., Feb. 10  Scored Final Senior Project Papers returned *(Approved papers to be included in Senior Project portfolio, “Not Yet” papers to be revised and re-submitted)*

Mon., Feb. 13  If Necessary: Make-up Faculty Senior Project Reading In-Service

Mon., Feb. 13  “Not Yet” Paper Revision Workshop (2:20-3:00 in Library)

Tues., Feb. 14  “Not Yet” Paper Revision Workshop (2:20-3:00 in Library)

Mon., Feb. 27  **Due:** “Not Yet” Revised Senior Project Paper

March 2 - 3  Senior Project Digital Portfolio Instruction in class

March 27 - 31  Senior Project Presentation Skills in-class instruction

Fri., March 31  **Due:** Completed Senior Project Portfolio

*Fieldwork must be completed and documented and approved Senior Project Paper must be in by this date to receive full credit. Students who are missing any components of the portfolio will incur a penalty of five percent for every day that the portfolio is not complete.*

*Students who do not have their Portfolio in by this date cannot participate in any extracurricular activities until the assignment is completed.*

Fri., April 7  **Due:** Presentation Outline

Tues., April 11  Senior Project Presentation for Parents of Juniors (7:00 p.m. in auditorium)

Wed., April 12  *Students whose digital portfolios are not complete by this date must petition the Senior Project Advisory Board in person on Thursday, April 14 in order to receive a possible extension and determine eligibility for participation in graduation.*

Wed., April 26  Senior Project Practice Speeches

*Wed., May 17  Senior Board Presentations / Honors Board Presentations (12:30 – 2:30 p.m.)

*All students must be in attendance on this date*

May 22-May 26  Individually scheduled Senior Board Presentations for students who received a “Not Yet” on May 17
Thurs., June 1  
School Committee Meeting for Honors Board Students

June 5  
Students who do not successfully complete a Senior Project Portfolio may begin to fulfill this requirement beginning on the day after their classmates graduate. They must successfully complete the Senior Project in order to receive their diplomas in accordance with School Committee policy and section 5 of the Board of Regents’ High School Regulations of 2003 and Section L-6-3.2 of the 2016 Board of Regents’ High School Regulations.
Appendix D

Bayside High School Senior Project Handbook: Topic Selection

Senior Project Paper and Fieldwork Topic Selection

Your paper and fieldwork selection for Senior Project deserve a great deal of contemplation and discussion. Some restrictions that apply to your choice are:

- it’s legal and appropriate,
- your parents agree with it,
- and it represents a learning stretch for you.

A learning stretch means that your Senior Project will serve to “stretch” your skills and knowledge in a particular area. Your project must be both challenging and achievable for you. Therefore, if you have previous skills or experience in a topic you are considering, you will have to explore this subject in a genuinely new and challenging manner, not just repeat what you already know or have already learned.

Two other restrictions that we need to name here for your topic choice are:

- no student may start a new club at Barrington High School as part of his/her Senior Project fieldwork
- no student may use firearms as part of his/her Senior Project fieldwork

It has been our experience that students who take great care in this decision enjoy Senior Project immensely; on the other hand, those who make an "easy," "quick" decision and fail to challenge themselves tend to worry the most and reap fewer rewards. Here are a few suggestions to make your topic selection process more fruitful:

- **Choose a topic you are truly interested in!** Last year’s seniors found that students who chose topics of interest to them enjoyed the project more, had fewer problems and got more out of the project. Students who chose topics they weren’t really interested in had more difficulty and got less out of the project.

- **Dare to dream!** Rather than making quick decisions regarding your project, make a list of the possibilities. Seek advice and input from your family and friends. Ask yourself, “What have I always wanted to do or to learn more about?” Write down your answers, no matter how crazy they may sound; one of them just may be the right focus for your Senior Project.

- **Don’t get discouraged!** If you are having difficulty finding a mentor, allow the Senior Project Coordinators, faculty members and other interested adults to help you locate potential community mentors and other resources.

- **Approach potential community mentors personally!** Act as though you are preparing for a job interview; dress nicely, give them the facts about your plans, and sell yourself! A personal discussion will be far more effective than a phone call!

- **Maintain contact with your mentor!** Once you’ve found a mentor, establish a schedule with him or her that is convenient for both of you. If you do not plan to start your fieldwork for several months, keep the lines of communication open with your mentor. Schedules change and accidents occur, so stay on top of the situation.