THE DOING REVOLUTION: SERVICE LEARNING, EARLY ADOLESCENTS, AND PERSONAL GROWTH

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Abstract

The purpose of this research was to gain insight and understanding of fifth grade students’ perspectives of their experiences in a service learning class in a middle school (grades 5-8). The theory of Experiential Learning Theory by David Kolb was used to frame this research. A literature review explored the developmental match between service learning and early adolescents, personal growth as a result of service learning, service learning as a tool for fighting bias and entitlement, curriculum integration and service learning pitfalls. The research question was: How did fifth grade students’ participation in a service learning program influence their personal development, including their engagement and self-efficacy? Through document reviews, interviews, observations, a questionnaire, photographs, and conversations, several themes emerged to describe the student experience in this course and the personal development of participants. The research indicates that service learning at the middle level increases self-efficacy and engagement in middle level learners. In addition, further findings were discovered about teacher growth mindset, supporting innovative teaching, and real life applications of Science, Mathematics, Engineering, and Technology (STEM) programs. The findings from this research could inform curricular decisions made at the local, state and national level, as well as school configuration and planning for meeting the unique needs of early adolescent students.

Keywords: service learning, self-efficacy, early adolescents, engagement, STEM
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In *Harry Potter and the Deathly Hallows* by J.K Rowling, during one of the last scenes of the series, Harry walks toward the greatest challenge of his life. As he walks toward his fate he is surrounded by everyone that has ever supported and loved him. It is a beautiful representation of how important each person’s community is to his or her success. I feel extremely lucky to have had so many folks walk with me during this long journey. Without them, I could not have accomplished this work or have found success in this program.

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Chapter 1: Introduction

“We move what we are learning from our heads, to our hearts, through our hands”

(Brown, 2015).

Adolescents face many challenges and rapid changes that impact their social, cognitive, and physical realms all at once. The manner in which early adolescents are schooled may not be the best developmental match to help middle level learners achieve both academic and personal success (Eccles, Midgley, Wigfield, Buchanan, Reuman, Flanagan & Iver, 1993). According to Simmons and Bluth (1987) early adolescents’ involvement in school, their grades and overall confidence, dropped during their middle school years. Transitioning from elementary school to a middle school was associated with higher rates of disengagement, fewer personal connections with teachers, and less parental communication (Eccles, Midgley, Wigfield, Buchanan, Reuman, Flanagan, Iver, 1993). This can yield dramatically negative results for students. Struggling in middle school can be associated with life-altering problems including bullying, isolation, dropping out, and a disengagement from academics and community (Goldenring & Rosen, 2004).

The model, curriculum and pedagogy for which middle level students (grades 5-8) are educated may not match the developmental needs of middle level learners. Traditional approaches such as departmentalized subjects and separate teachers and larger school settings may discourage middle level students from making connections, finding relevance, and gaining confidence (Eccles, Midgley, Wigfield, Buchanan, Reuman, Flanagan, Iver, 1993). Pedagogy such as service learning may be a better developmental fit for middle level learners and provide important social, emotional and academic learning experiences for students during transitions into adolescence.
The purpose of this research was to gain insight and understanding of fifth grade students’ perspectives of their experiences in a service learning class in a middle school (grades 5-8). This case study provides research of the impacts of service learning on middle level learners from the perspective and voices of students, school staff, and the classroom teacher. This shares insight about how to best meet the developmental and stage fit needs of middle school students.

**Research Question**

How did students’ experience in a service learning class influence their personal development (self-efficacy and engagement)?

**Significance**

This study has the potential to have implications for many stakeholders in public education. First of all, it could impact the learning environment and curricular decisions made for middle level learners. This audience includes educational leaders, policy makers, curriculum coordinators and school boards that are responsible for creating the most productive learning environments possible for students. Since service learning was found to have positive effects on middle level learners, then this pedagogy could be more widely adopted and studied as a better fit for early adolescent students.

The implications are particularly significant for middle level students themselves, who face increased disengagement from learning, decreased achievement, and less parental communication as they transition to middle school (Eccles, Midgley, Wigfield, Buchanan, Reuman, Flanagan, Iver, 1993). Middle school is often the last best chance to engage students in their learning and for them to experience success before the all important ninth grade year.
Completing ninth grade on time was linked to increased rates of graduating from high school (McCallumore & Sparapani, 2010).

**Limited Research on Middle Level Service Learning.** The problem of practice was based on the limited empirical research that studies the effects of middle level service learning from the participant perspective (Richards, Cornelli, Sanderson, Celio, Grant, Choi, George, & Deane, 2013). Many researchers have noted the inconsistencies of quality in service learning programs and the variance of student outcomes (Billig, 2000; Eyler & Giles, 1999; Furco, 2003). This led to mixed results and a limited set of data about service learning pedagogy as a teaching and learning tool that engages, excites, motivates, and focuses students. Experiential learning theory provided a way to fill the research gap by exploring service learning through this lens. Billig (2004) in particular explored how high quality service learning programs yield the best student impact in terms of student growth academically, socially and emotionally. This study was motivated by the lack of research that links service learning with personal development in early adolescent students.

**Research Paradigm**

The research was firmly rooted in the constructivist/interpretivist paradigm. Participants and the researcher constructed new knowledge together through qualitative approaches for exploring lived experiences. According to Merriam (1991), interpretive research focuses on process instead of product. Constructivist research is about meaning and discovering how people make sense of their lives. First, it views the individual as capable of multiple realities and truths, capable of being understood through deep reflection (Ponterotto, 2005).

This paradigm also changed the role of the researcher, as co-designer of the study and a key player in the research process and product itself. Through dialogue and interaction, meaning
was created and findings discovered. Constructivism takes into consideration the senses, the individuals’ background, understanding, and emotional contexts, all of which impact the research and study. It moves from the basic scientific understanding of a phenomenon, to the discussion and interpretation of it’s meaning, which is especially applicable in the human sciences. This approach is the universal and common approach and paradigm for most qualitative research. As a storyteller and writer, this approach was compelling in that through research, reflection, evaluation and synthesis, as Butin (2011) said in The Educational Dissertation, the researcher is telling the story. The world is “an ongoing story told and refashioned by particular individuals, groups, and cultures involved” (p. 60).

**Role of the Researcher**

The researcher had extensive experience as a classroom teacher and could quickly establish a rapport and connection with students. The research was modeled on Michelle Fine’s work (Ravich and Riggan, 2011) by using participants to help shape research. Research methodology such as identity maps, interviews and observations were used to collect data. This was an empowering process for students. Positionality will be further explored in chapter three.

**Theoretical Framework**

Experiential learning theory was the guiding theoretical framework for this study. This constructivist theory was the lens to construct this study and share the results. As a qualitative study, this research used experiential learning theory to focus on the participants’ lived experiences.

**Experiential Learning Theory: theorists, history and seminal work.** Experiential learning theory dates back to John Dewey and the viewpoint that the learner is not separate from the environment (as cited in Hutchinson, 2000). The environment and the learner must be
explored together. Dewey, known as the father of experiential learning, claimed that all education is from experience (2007).

Several theorists extended Dewey’s view that students learn from experience and hands-on social learning. These included Kolb (1984) and Vygotsky (1997) who noted how the teachers’ role in authentic education shifts from an all-knowing stance, termed the banking method (Freire, 1970), to a role of facilitator and fellow problem solver. In other words, teachers do not simply fill students with their knowledge, but help them discover knowledge through their own experiences, reflections, and social interactions. Moore (1990) focused on extending this to include shifting systems of meaning, as evolving and iterative in experiential learning opportunities. Students who are learning from experience are making new meaning and shifting this meaning based on their experiences.

Kolb’s (1984) model for experiential learning consists of four stages (Figure 1). In this model, Kolb argued, that for successful learning, the student must progress through all four stages. In essence, he asserted that an experience without the processes of reflection, drawing conclusions from it, and applying it in a new situation, was not a learning experience. This aligned well with the components of a high quality service learning program because all components are essential for high quality learning to take place (Billig, 2000).
Service learning is a curricular approach that features students exploring problems in their school or community and developing plans to solve them. According to Kids Involved Doing Service Learning consortium (KIDS), a non-profit organization devoted to increasing service learning opportunities for students, service learning is when students,

…discover problems and needs in their school; investigate the causes and effects of the problems they identify; research various solutions to the problems; evaluate the pros and cons of each solution and decide on the actions to take; create an action plan and timeline to implement ideas; implement the plan; and evaluate the results of actions (Overview, para. 4, 2013).

High quality service learning programs move students through stages similar to Kolb’s model of experiential learning theory. Students discover their interests and a problem within their school or community and design an experience or experiences (concrete experience). They are constantly reflecting on these experiences in journals, discussion groups, or in other reflective practices (reflective observation). These reflections usually indicate new knowledge that is
constructed (abstract conceptualization). Then students move ahead to a next experience, or other learning opportunities (active experimentation).

Other important theorists with connections to experiential based learning are Giles and Eyler (1994) who outlined the parts of inquiry based learning. These included the interest of the learner, creating intrinsic motivation, awakening new curiosity, and fostering development over time. Inquiry based learning tied in with Dewey’s experiential learning theory in that learning must be rooted in the motivation, experience, and feelings of the learner to be authentic. This also has an application to service learning, especially when student voice and choice were prevalent in guiding the projects.

Shelly Billig (2000) explored the many positive effects of service learning on students, including academic, social, emotional growth. While the quality of service learning experiences may vary, certain components within the experience can nonetheless increase student learning and growth (Billig, 2000).

**Experiential Learning and This Study.** Experiential theory is firmly rooted in the constructivist paradigm, where learners construct their own identities, realities, and learning through experiences. Experiential learning theory guided the research in several components that are reviewed in this section.

**Stage fit.** The problem of practice focused on how traditional middle school and junior high models are not meeting the developmental and social needs of early adolescents. Many early adolescent students transition into new schools right at the time when they are facing massive physical, emotional, and social change that comes with adolescence. Students benefit in many ways from an education that is rooted in experiences, social interactions, and relevant, authentic learning. Experiential learning theory, with its focus on new experiences, reflection,
new learning, and real world applications gave these students a model much better suited for their developmental level through service learning. Experiential learning theory promotes active, engaged and experiential learning based in local communities. These featured student voice, autonomy, and choice and provide higher levels of engagement and academic success for students (Billig, 2000) right at the developmental level when students need it most, in early adolescence.

**Experiential Learning Theory & Research Question.** The research question, study focus, and the literature review were crafted to create a logical flow of information and ideas. Sparrowe and Mayer (2011) explained that researchers start with big ideas and concepts, and then lead the reader through compelling arguments using literature that eventually leads the reader to the research questions. They should not be a surprise.

Experiential learning theory clarified the research question in several ways. The research question focused on the student experience in a middle level service learning project. By using this theory, the research questions were in terms of student perception and growth in the areas of personal development, including self-concept. These were all discovered through reflection, which is a component of the experiential learning theory.

In addition, Kolb’s model of experiential learning provided a framework to view how students were affected by service learning as they moved through the various stages. Rivers-Murphy (2013) noted the importance of student reflection because it helped provide an in-depth understanding of the service-learning phenomenon and the connections between learning and application from the student perspective. Experiential learning theory guided my research questions to focus on the student experience.
Experiential Learning Theory in Methodology. According to Sparrowe and Mayer (2011), theoretical frameworks are used to explore the research questions and frame how the study will proceed in terms of methodology, guiding constructs and organization.

Kolb’s model. Kolb’s stages of experiential learning (1984) were used to explore the student experience in a middle level service learning program.

Reflective activities are an essential part of high quality service learning programs and projects (Billig 2000). Qualitative methods such as student interviews, open ended questions, identity maps, and reflective journaling were used to reveal student perception, new learning, and changes in thinking. The evidence was gathered throughout the experience. The data was analyzed and coded to indicate which of Kolb’s (1984) phases of experiential learning was happening. These included concrete experience (doing/experience), reflective observation (reviewing/reflecting), abstract conceptualization (concluding/learning) and active experimentation (planning/trying out what you have learned). Student perceptions were organized into these themes and analyzed for commonalities and differences.

What follows is how the phases of Kolb’s model of experiential education were part of the service learning project and how student responses were organized and analyzed with these themes. The steps of experiential learning (Haynes, 2007) were helpful to explore in terms of activities in service learning and opportunities for growth within the experiential learning theory model by Kolb.

Experiencing/Exploring. Activities in this category included “doing.” This involved hands-on activities such as making products or models, role-playing, or problem solving. In service learning, this includes the preparation for service (research, problem solving, phone calls to community members, designing, planning, meetings or interviews), and the actual service,
which could be in the school or community. In the service learning project at the research site, students had self selected jobs to care for the living organisms and sustainability space. In addition, it was their job to problem solve any issues that came up and constantly improve the living conditions for the chickens and other spaces for the school community. These responsibilities were considered the “doing” phase of this theory.

*Sharing/Reflecting.* This phase asked, “What happened?” This could happen through whole group sharing or peer to peer sharing. The discussions about what happened could be based on teacher directed questions or journal prompts. All of these were components of service learning projects and were part of the course at the research site. Students in this program participated in regular reflection activities and discussed their experiences daily. These reflective activities were analyzed as a part of this research.

*Processing/Analyzing.* In these reflections students analyzed what was important. They reflected upon themes, problems and issues within the experience and their lives. These were particularly important considering the developmental needs of early adolescents and the focus on measuring personal growth.

*Generalizing.* Students were asked to connect their experiences to real life by asking “so what?” This was where students made connections between their experiences and practical applications in their lives. Generalizing was witnessed in interactions between the teacher and students in this research.

*Applications.* Lastly, students in experiential learning such as service learning needed to explore the concept of applying what they learned in similar and different contexts. This is where the significant change can occur. Student attitudes, biases, confidence, and self of sense
can be transformed if they are applying new knowledge based on experience. This data was gathered through qualitative methods such as interviews, journals, and identity mapping.

**Process orientation.** Qualitative research is process oriented and focused on capturing experiences and the voices of participants. The research questions focused on participants’ experiences, perceptions, and feelings. The focus of this research was exploratory, iterative, and emerging. It was focused on the learning process and the individual’s experience in it. The methodology was guided by qualitative practices and the inductive and circular learning stages in Kolb’s model of experiential learning theory.

**Experiential Learning Theory in Findings.** It was the researcher’s hope that the findings of the research would be immediately applicable to practicing teachers and practitioners of service learning. Sharing the findings using Kolb’s (1984) experiential learning model to organize and clarify the results could inform others who lead experiential, hands-on, and service learning programs. In other words, the researcher’s hope was that this research, shared through the lens of the experiential learning theory on middle level service learning, could have direct implications on teachers who want to use service learning pedagogy more effectively or those interested in beginning this teaching and learning practice. In addition, this research could impact the decisions school leaders make about the best learning environment for middle level students.

**Alignment.** There is a very natural alignment between this theory and service learning work. Kolb’s experiential learning theory stages were the phases students move through in the service learning experience at the research site, which was the focus of this study. This was a natural frame from which to explore students’ experiences. Using Dewey, Kolb, Vygotsky and Freire to guide this theoretical framework and connect to service learning with adolescents
seemed like a good fit. In addition, there is very little research on middle level service learning programs, so this study filled a gap in the research and provided valuable information about the experiences of early adolescent students involved in service learning.

**Stage Fit.** More empirical research is needed about service learning with early adolescents and how this pedagogy might be a good developmental fit for these learners. Several researchers have been making the case that traditional junior high and middle school models are not meeting the needs of young adolescents (Blackwell, Eccles, Midgley, Wigfield, Buchanan, Reuman, Flanagan, Iver, 1993). High quality service learning projects with the components outlined by Billig (2000) and Rivers-Murphy (2013) could fill some of that gap. A focus on the middle level shined a light on service learning as a developmental approach for educating early adolescents.

**Limitations.** Kolb’s view of experiential learning as a cycle could be a limitation in this study. Is learning in these distinct stages the only way possible, or is it iterative and flowing both ways? Viewing learning through the lens of discreet stages might limit the description and sharing of this research. In other words, while experiential learning theory was a good fit for this research, how it was used to view and share information could be a limitation as well as an opportunity.

In addition, can learning stages not be skipped, as Kolb (1984) indicated? This may benefit certain types of learners and not others. In addition, significant learning might take place within these stages, but if using the experiential learning theory only, they might not be recorded. The researcher noted student growth within stages to prevent this limitation from taking shape.

Experiential learning theory impacted every part of this research project. It was grounded in the constructivist paradigm and the writings of John Dewey and Lev Vygotsky. The
experiential aspects and nature of service learning, and the phases of this theory, aligned well and provided a solid framework from which to begin this study.
Chapter II: Literature Review

Introduction

The middle school years are challenging for many students (Simmons & Bluth, 1987). Issues such as a lack of self confidence, social problems such as bullying, and disengagement increase during early adolescents (Goldring & Rosen, 2004). How do school environments, pedagogy, and curricular practices impact these learners? What follows is a review of the literature about early adolescence and one pedagogical practice that can benefit early adolescent students in several ways.

Service learning is a teaching and learned tool that shows promise in engaging, motivating, and empowering early adolescents. This literature review explores how service learning can benefit a middle level student’s personal development. This literature review will explore the research about the impact of service learning on middle level learners and how factors such as curriculum, bias, and student grade level effect this personal growth.

Service learning is an approach that features students exploring problems in their school or community, and developing plans to solve them. According to Kids Involved Doing Service Learning consortium (KIDS), a non-profit organization devoted to increasing service learning opportunities for students, service learning is when students find problems and needs in their school; explore and discover the causes and effects of the problems they identify; research and identify various solutions to the problems; evaluate solutions and decide on the actions to take; create an action plan and time-line to implement ideas; implement the plan; and evaluate the results (2013).

Service learning will be referred to in this literature review with this definition in mind.
Personal development, for the purposes of this study, are issues pertaining to an adolescent’s self-confidence, happiness, self-efficacy, perceptions of belonging, sense of civic engagement, and open-mindedness. In addition, personal development in this review refers the concepts of tolerance, biases and stereotypes (Aubrey, 2010).

This literature review is organized into the following sections: (a) the developmental match between service learning and early adolescents (b) personal growth as a result of service learning (c) service learning as a tool for fighting bias (e) curriculum considerations and (f) service learning pitfalls.

**Developmental Match: Middle School and Service Learning**

Adolescence, particularly early adolescence, is a period of massive transition for students. From body changes, social dynamics and shifting friendships, to transitioning from elementary school to middle school, this timeline is marked with massive and frequent change. During adolescent growth, researchers note a decline in engagement, parental communication, motivation and achievement (Eccles, Midgley, Wigfield, Buchanan, Reuman, Flanagan, & Iver, 1993). Early adolescents’ needs for schooling are also changing and developing. Research shows that early adolescents prefer to learn through peer interactions, active learning, and connecting with the community (Payne, & Edwards, 2010). In other words, adolescents developmentally crave a Vygotskyan approach to education, based on learning through social interaction as a way of developing meaning (Vygotsky, 1978). As mentioned earlier, this is often not present in traditional junior high or middle school models. This section will explore how service learning is a teaching tool that developmentally matches the needs of the early adolescent students and provide opportunities for enriched personal growth.
The importance of ninth grade. Researchers have highlighted the importance of ninth grade in predicting a student’s chance of graduating from high school (McCallumore & Sparapani, 2010). Student success, according to researchers, is directly linked to success in grade nine. Researchers have also explored how service learning in the ninth grade yielded a strong correlation between student engagement and high school graduation. During a K-12 School Based Learn and Serve Grant in two high needs schools in Illinois over a three year period, several service learning initiatives for ninth graders were developed (Sims, 2010). During these initiatives researchers found many benefits, including increased social engagement, levels of civic responsibility, leadership development, and personal growth. Specifically in terms of personal growth, teachers reported an increase in maturity and self-efficacy in students who participated in this project (Sims, 2010).

During the critical year of ninth grade, it is essential that students experience academic and personal success to increase chances of graduating from high school (McCallumore & Sparapani, 2010). Ninth grade serves as a transition from middle school to high school. In the above service learning project, new ninth grade students were aiding younger students transitioning to middle school as part of the service learning project. This held reciprocal benefits for both parties (Sims, 2010). In other words, both the new middle school students and new high school students benefitted from participation in this service learning project. Ninth grade service learning projects are linked to greater academic success in ninth grade, which then increases graduation rates (Sims, 2010). In summation, ninth grade is a critical year for students to find academic success, and research suggests that service learning is one tool for students to achieve academically and grow personally. Next, research about middle grade (sixth, seventh and eighth grades) students’, engagement, and high school rates is explored.
Middle school, dropping out, and engagement. The middle grades are also critically important in terms of student engagement and high school graduation rates. When students do not achieve academic success during the sixth grade, research shows they had poor attendance and a 10-20% chance of graduating high school on time (Payne, & Edwards, 2010). One of the primary reasons students dropped out was uninteresting classes (Farber, 2010). Middle level students are unique in their pedagogical, socio-emotional, and personal needs, so relevant, authentic, and social learning experiences are needed to engage these learners (Eccles, Midgley, Wigfield, Buchanan, Reuman, Flanagan, & Iver, 1993). According to the National Middle Level Association, “With young adolescents, achieving academic success is highly dependent on their other developmental needs being met” (National Middle School Association, 2003. p. 3). In other words, middle school students’ cognitive, emotional, social and physical needs were intertwined and impacted their engagement and motivation in school. According to Payne and Edward (2010), service learning is a way to re-engage learners in school and put them on a path to successfully graduating from high school.

Middle school service learning. Limited research was available for middle school/level service learning. Researchers determined that less than 9% of service learning projects are designed and implemented for middle school students (Richards, Cornelli, Sanderson, Celio, Grant, Choi, George, & Deane, 2013). Researchers also made the developmental case for involving early adolescent students in service learning and pointed out several benefits of doing so (Billig, 2000).

One study of middle school service learning and academic success compared three schools including a population of 1,153 sixth through eighth grade students (Scales, Blyth, Berkas, & Kielsmeier, 2000). Researchers analyzed several features linking the development of
adolescents to service learning. This study tested social responsibility, personal development, parental involvement, and engagement with school, perceived scholastic competence, responsibility, academic success, conduct, and mastery of goals. Key findings include increased personal growth in groups that participated in longer durations of service learning projects, and those who did a great deal of reflective work (Scales, Blyth, Berkas, & Kielsmeier, 2000). Students also reported that participating in service learning encouraged them to become interested in other classes.

**Sixth grade females.** The largest positive impact (including parental communication and responsibility) on the middle school students was reported within the sixth grade female population (Scales, Blyth, Berkas, & Kielsmeier, 2000). These results connected to other research that demonstrated how service learning is impactful on middle school females (Eccles, Midgley, Wigfield, Buchanan, Reuman, Flanagan, & Iver, 1993). In that research, early developing females in grade six showed the most growth and benefits from service learning. Often this group has particular social challenges, such as more difficulty with identity, and decreased teacher communication (Eccles, Midgley, Wigfield, Buchanan, Reuman, Flanagan, & Iver, 1993). Assisting these students with the transition from elementary school to middle school, and childhood into adolescence could have long-term positive results (Alspaugh, 1998).

**Parental communication.** Parental communication (between the child and parent) about school declines in the middle school years (Eccles & Harold, 1993). Communication between adolescents and their parents is important because involvement in school helps improve student academic success (Scales, Blyth, Berkas, & Kielsmeier, 2000). Middle level students had increased levels of parental communication after participating in service learning projects. Therefore, service learning projects at the middle level increase communication between students
and parents, which in turn increase student achievement (Scales, Blyth, Berkas, & Kielsmeier, 2000).

**Sixth grade impacts.** Research revealed that sixth graders had the most increases in positive outcomes both personally and academically from their participation in service learning (Scales, Blyth, Berkas, & Kielsmeier, 2000). The authors cautioned that this could be for several reasons other than their age and grade level, including the quality of the projects and gender norms and expectations. Researchers call for more research to be done to see which middle grade, if any, yielded the most positive outcomes from service learning. This is preliminary evidence that service learning is very impactful in the early middle grades, especially grade six (Scales, Blyth, Berkas, & Kielsmeier, 2000).

This section provided a wide range of studies that support the use of service learning for many positive student outcomes including leadership skills, increased engagement and lessening of dropping out, increased parental communication, and increased self-efficacy. In addition, the research points to a developmental match between the needs of early adolescents and the type of learning and experiences service learning provides.

**Personal Growth in Middle Level Students**

Personal growth can take many forms. There is not a universally accepted definition of personal growth, but in the context of early adolescents, scholar-practitioners can look for growth in empathy, perspective taking, leadership, interpersonal skills, reduced bias, increased confidence and connections with others (National Middle School Association, 2003).

**Reducing entitlement.** The idea of limiting entitlement fits nicely into the concept of personal growth and development. In a study about college students, the researchers present a connection between service learning and self-entitlement (Hoffman, & Wallach, 2007). They
explore how colleges can reduce self-entitlement in students through participation in service learning programs. Entitlement in this study was framed in terms of increasing personal responsibility and self determination that leads to the betterment of society. In other words, researchers note self-entitlement, or avoiding responsibility and having limited self determination, as challenges for college students and as a challenge for future involvement in society and democracy (Hoffman, & Wallach, 2007). Other researchers have explored how participation in service learning projects impacted entitlement behaviors as well (Hardward, 2007). Key findings include college student participation in community service increases students’ perceptions of the importance of volunteer work and significantly decreases self entitlement attitudes. In a report about engagement and the purpose of the liberal arts in higher education, authors note:

We believed that by engaging students, by involving them in demanding service-learning and community-based research experiences, the academy could force them to consider their own privilege; challenge their assumptions of entitlement and self-indulgence; help them recognize that learning has implications for action and use; help them develop skills and habits of resiliency; and make them aware of their responsibilities to the larger community. (Harward, 2007. p. 6).

This is the case with service learning and entitlement (Hardward, 2007; Hoffman, & Wallach, 2007) because outcomes included a shift in perception, from entitlement (blaming, expecting things to be done for you) to being responsible for one’s own actions.

**Spirituality and life happiness.** Further exploration of personal growth and service learning found connections to spirituality and life happiness. Louie-badua and Wolf present the idea that service learning increases students’ spirituality (2008). It is important to note that the
authors define spirituality not as religious per se, but as “one’s subjective awareness and internal values, with the ability to explore the meaning and purpose of our lives” (Louie-badua & Wolf, 2008, p. 91). They focus on three dimensions of service learning: interconnectedness; opening the heart to those around you, or removing “otherness;” and reflection that explores one’s background, values, purpose and meaning. These dimensions bring can bring lifetime commitment to serve others (Louie-badua & Wolf, 2008, p. 91).

This value and meaning also connects to studies of life happiness. Research on the effects of happiness and adult motivation has been widely studied, but little is known about life satisfaction and happiness effecting education in K-12 students. In a study by Lewis, Huebner, Malone, and Valois (2011), their research is focused on how life satisfaction impacted student engagement in adolescents.

When considering student engagement, personal factors such as a student’s emotional health and life satisfaction are important considerations. This is true especially in adolescence stages, when academic performance sags (Forrest, Bevans, Riley, Crespo, Louis, 2013). Researchers found that middle school students who reported they were content with their lives at the beginning of the school year were more likely to engage in their academic career despite their race, gender, socio-economic status, grade point average, and family status. This finding connects to Fredrickson’s (2001) Broaden and Build Theory of Positive Emotions. Fredrickson postulates that students with higher life satisfaction are more successful in school. Researchers in the areas of life happiness and spirituality encourage school professionals to seek, monitor, and improve cognitive engagement and life satisfaction in students (Louie-badua & Wolf, 2008; Lewis, Huebner, Malone, and Valois, 2011). Next, the benefits of service learning for all parties involved are explored.
**Reciprocal benefits of service learning.** Reciprocity in service learning has been noted by researchers (Jacoby, 1996; Vogel & Seifer, 2011). According to Vogel and Seifer, “Community and university partners – including faculty members, students and community organizations – are engaged as co-learners and co-creators of knowledge” (2011, p. 186). In other words, all parties involved in service learning benefit from the experience. In one study researchers analyzed the outcomes of a service learning project involving college freshman and elementary school students. They found reciprocal benefits for both the college and the elementary students. The findings reveal that college students who participated in service learning expressed gains in self-esteem, coping strategies, and they volunteered more in their communities (Eppler, Ironsmith, Dingle, & Erickson, 2011). According to the study, elementary students showed gains in their reading scores. Service learning projects designed around mentoring younger students can yield positive results for both parties, thus providing evidence that in-school leadership service learning can be just as valuable as service learning in the community (Eppler, Ironsmith, Dingle, & Erickson, 2011).

**Positive relationships.** Another aspect of personal growth is increased positive relationships with others. Carlisle (2011) focused on students who built positive relationships with teachers, other students and school staff in service learning experiences. Researchers recognize that adolescence is a period when students tend to disregard adult role models and focus on their peers instead (Carlisle, 2011; Becker & Luthar, 2002). Problems that middle school students face include bullying, teasing and exclusion (Goldenring & Rosen, 2004). These happen primarily during unstructured times such as locker and lunch breaks. Researchers have studied how developing healthy relationships between teachers, schools staff and students, through participation in service learning projects, can combat some of these problems. Key
findings include improvements in student behavior in terms of lessening bullying and office referrals, and an increase in students expressing a need for healthy relationships (Carlisle, 2011).

**Student engagement.** Student engagement has been mentioned in this literature review as it relates to school attendance and graduation, but it is worthy of further exploration as it relates to service learning. Educational researchers have studied various ways to define, categorize and label student engagement. Some of these are shared in this literature review, as a starting point in seeking connections between student engagement and service learning.

According to Lewis, Huebner, Malone, and Valois (2011) student engagement is thought of as “a student’s degree of active involvement in school through his or her thoughts, feelings, and actions” (p. 251). Maslow (1954) recognized that the emotional needs of individuals have to be met before any other educational goals. Each day, students arrive in classrooms with varying degrees of availability for learning, engagement and personal development. Students’ cognitive engagement, especially in early adolescence, is linked to their socio-emotional needs (National Middle School Association, 2003).

When considering student engagement, Newmann stated, “Engagement is difficult to define operationally, but we know it when we see it, and we know it when it is missing” (Newmann, 1986, p. 242). In a comprehensive review about the definition of student engagement, study author David Zyngier (2008) research reveals that it was mentioned in many studies and articles, but rarely defined. Many researchers have based their definitions on three distinct components, of student engagement: cognitive, emotional, and behavioral (Murray, Mitchell, Gale, Edwards, & Zyngier, 2004; Smith, L. Butler-Kisber, L. LaRoque, J. Portelli, C. Shields, C. & Sparkes, 2001). Cognitive engagement focuses on the achievement linked academic goals and participation within classrooms. Emotional involves the feeling aspects of
learning, discussion, and self-perception. Behavioral engagement is considered as positive classroom behaviors that support learning. These categories provide a solid framework for discussing engagement, but don’t share the whole picture. According to Zyngier’s review (2008), another researcher, Finn (1989) attempted to combine these realms into a participation/identification model, which equates engagement with academic success, based primarily on the individual, not considering gender, socio-economic status, class and ethnic factors. Indeed, there are varying research opinions about whether engagement is even linked to academic success (Zyngier, 2008). Finn’s research (reviewed by Zyngier) analyzes engagement to school contexts such as students’ feeling of belonging and valuing school outcomes.

Similarly, Newmann isolates factors that constitute engagement in the following way, “(i) school membership (clarity of purpose, fairness, personal support, success and caring) and (ii) authentic work (extrinsic rewards, intrinsic interests, sense of ownership, connection to real world and fun” (Newmann, 1992, p. 18). Zyngier (2008) notes recent research points to inclusive classroom environments, with greater parental involvement, and student empowerment in curriculum leads to increases in the above listed factors. Additionally, he argues that student engagement must not be viewed in isolation, but must include school, teacher, and cultural contexts.

The above mentioned contexts for learning (school, teacher, culture) are also very important in building strong service learning environments. Student leadership, voice and community involvement is linked to increased engagement, and these are fundamental aspects of service learning (Billig, 2000). Newman’s concepts of school belonging and authentic work are linked directly to service learning. By involving students in all aspects of school and community
functioning and building an inclusive community, this research on engagement supports a direct connection to the authentic, place based work of service learning.

**Bias**

Analyzing one’s assumptions, biases and stereotypes can help with personal development. This is important educational work for the classroom. Researchers believe that prejudices and stereotypes begin during the toddler years (Teaching Tolerance, 2014). These develop throughout childhood unless disrupted by individuals or experiences. Even biases that are thought to be extinguished can linger unless directly addressed. According to Gorski, “Parents, teachers, faith leaders and other community leaders can help children question their values and beliefs and point out subtle stereotypes used by peers and in the media. Children should also be surrounded by cues that equality matters” (Gorski, 2008, p. 36). Just how might service learning challenge bias that might exist or be developing in a middle level learner?

**Preservice teachers, bias, and service learning.** This literature review will explore bias in terms of teachers, because it provides a window into how service learning can challenge existing biases. One study focused on pre-service teachers who completed service learning projects with urban high school students. Researchers found that many of these pre-service teachers had stereotypical preconceived notions about urban, mostly minority youth (Conner, 2010). By working with this population through service learning, pre-service teacher’s biases are “unlearned.” In other words, pre-service teachers dispelled their own assumptions about urban youth based on direct interaction with them through service learning (Conner, 2010). Service learning opportunities must be complemented by student voice and reflection in order to bring about these changes. In addition, researchers found that the service learning program must be well planned, high quality, and involve reflection and connections in the classroom to be
impactful. If the experience is not of high quality and does not include those tenants, then attitudes can remain unchanged or even become more negative (Erickson, 2009). Conner’s study (2010) features Contact theory, which shares five necessary conditions for attitude change (Allport, 1954). These conditions include equal opportunities for contact; shared and common goals; group cooperation; support of customs; cultures or law; and sustained contact (Allport, 1954). When these are present, researchers conclude, biases can be disrupted (Dovidio, Glick, & Rudman, 2005). In addition, the study also uses the theory of unlearning (Kohl, 1994). This theory helps pre-service teachers analyze their own preconceptions and language to see if it marginalizes oppressed populations. Both of these theories help provide insight about how biases can be challenged or unlearned through service learning experiences.

The service learning outlined Connor’s study (2010) will have ramifications for thousands of students because their teachers will now begin their careers with fewer biases, stereotypes, and preconceived notions about students from differing backgrounds. The research reflects the theme emerging in this review of the literature, unlearning bias.

**Disrupting age bias in elementary students.** A case study was presented of a class of fourth grade elementary students who visited a residential facility for the elderly as part of a long term service learning project. Through repeated interactions, shared experiences, and reflection before, during and after the experience, the students’ perceptions of the elderly were transformed. The students reduced or eliminated biases about the elderly, developed a better understanding of elderly people, learned problem solving skills and developed a sense of satisfaction from their work (Fair, Davis, & Fischer, 2011). In other words, students began their service learning experience with biases and assumptions about the elderly. Researchers noted a marked change in these perceptions during and after the service learning experience (Fair, Davis,
& Fischer, 2011). This provides more evidence that service learning can help elementary and college student unlearn biases.

While there is a great need for more research in this area, studies indicate that service learning can be a tool to help students participate in an experience that can change their thinking about others (Billig, 2000). As far as personal development is concerned, reducing bias in schools can yield significant benefits for the school community and beyond. School violence, bullying, and exclusion usually have roots in biases, assumptions and stereotypes (Partners Against Hate, 2014). Therefore, it is critical that educators explore meaningful ways to disrupt bias and provide repeated opportunities where students can broaden their thinking.

**Curriculum Integration Considerations**

Throughout this literature review, the author has used words such as “well developed” “carefully planned” and “thoughtfully designed” to describe service learning programs. Themes of reflection have surfaced through the research, but there is much more to service learning than reflection. The following section will highlight the features of high quality service learning projects.

**Aspects of high quality service learning experiences.** Shelly Billig’s (2011) article, *Making the most of your time: Implementing the K-12 service-learning standards for quality practice*, highlighted six components that create high quality service learning programs. These components include investigation, planning, action, reflection, demonstration, and celebration. Research about service learning demonstrates that these components (or similar ones) are needed for service learning projects to be effective and yield positive results (Billig, 2011; Farber, 2010; Anderson & Hill, 2001). Billig (2011), shares several standards for high quality service learning that include the indicators in Table 1.
Table 1

Standards and Indicators of Quality (Billig, 2011)

<table>
<thead>
<tr>
<th>Standard</th>
<th>Indicators of Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration and Intensity</td>
<td>Service learning projects have a long enough duration to participate in all the components, and to meet community needs and project goals—usually several weeks or months.</td>
</tr>
<tr>
<td>Meaningful Service</td>
<td>Projects are age-appropriate and personally relevant. Process leads to attainable goals and increased understanding of societal issues.</td>
</tr>
<tr>
<td>Links directly to curriculum and learning content</td>
<td>Projects have clearly articulated goals, are aligned with the curriculum, connect to other learning, and are supported by school boards.</td>
</tr>
<tr>
<td>Reflection</td>
<td>Service learning experience has regular reflection opportunities that promote in-depth thinking about society, self, and service.</td>
</tr>
<tr>
<td>Diversity</td>
<td>Helps students develop multiple perspectives, conflict resolution skills, the ability to overcome stereotypes, and to understand diverse backgrounds.</td>
</tr>
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Educators seeking the positive results of service learning can use the components and the indicators of quality to shape their projects to have the most impact.

**Service learning integration examples.** Public schools have integrated service learning into academic subjects in a way that develops personal growth in students. Next, this literature review will explore several examples of service learning projects that were integrated into existing curriculum and studied by researchers for their outcomes.

**Literacy integration.** Martin and Smolen (2010) describe how service learning can be a vital part of a literature unit that promotes citizenship education and social justice. In a literature unit highlighting the social justice struggles of the Irish potato famine, students learned about the issue of hunger from personal narratives in historical fiction. Students then continued this exploration by researching hunger at the local and international level. During a service learning
project, students developed ways to help those impacted by hunger through a social justice and historical lens. This allowed students to connect more deeply to the issue versus simply considering it an act of charity that impacts only “others.” In this case, students developed a greater understanding of hunger and social justice through an interdisciplinary learning process that included service learning. This type of project builds empathy and understanding about complex social issues (Martin and Smolen, 2010).

*Culturally responsive and community integrated projects.* Dewey’s sentiments that education is not preparation for life, but it is life itself could not be more clear than when students are involved in relevant community action that directly impacts where they live (Dewey & Small, 1897). Another example of service learning integration is a dramatic scene where a middle school student passionately implores a Natural Resources Committee to preserve a Cherokee heritage site as a state park (Terry & Panter, 2010). She explains that officials shouldn’t oppress the Cherokee again by a lack of action. The scene begins a case study of a National Learn and Serve grant service learning project administered in a southern, suburban middle school in a gifted program. The project takes a different approach, featuring The Bernstein Artful Learning Model, which is an “arts based school improvement model” (Terry & Panter, 2010, p. 157) that was inspired by the composer Leonard Bernstein. This method is focused on the exploration of masterworks for teaching and learning. The four elements include experience, inquiry, creativity and reflection, which are similar to the components listed by Billig (2000). The key findings from this study included significant gains in self-efficacy and altruism in students. The children who learned historical content using service learning found they could make a real difference in an issue in their own communities. Students in this study developed
greater levels of altruism, or “feelings and behavior that show a desire to help other people and a lack of selfishness” (Merriam-Webster, 2014).

**Collaboration with school staff.** Another idea for integration of service learning to promote personal growth is the involvement of guidance counselors in the planning, delivery, and coordination of projects. One study focused on service learning classes taught by school counselors at the middle school level. Researchers found student growth in several areas, including personal awareness, social skills, learning skills, career interests and character education (Stott & Jackson, 2005). The authors advocated for service learning to be taught and led by guidance counselors for optimal character development and civic growth. For educators, partnering with the guidance counselors to co-teach is a good strategy to develop projects, which help students with personal growth and development (Stott & Jackson, 2005).

**Partnering with governments and organizations.** Service learning has also been studied as it correlates with other initiatives by governments, non-profits, or foundations. Another aspect of high quality service learning projects that allow for greater personal growth is the important connection between service and school/community goals. A multi-year service learning program took place at a sixth through eighth grade middle school, utilizing the Millennium Development Goals as a framework (Wall & Edmunds, 2009). The Millennium Development Goals are a blueprint agreed to by all the world’s countries and developmental institutions. They include: eradicating extreme hunger and poverty; achieving universal primary education; promoting gender equality and empowering women; reducing child mortality; improving maternal health; combating HIV/AIDS, Malaria and other infectious diseases; ensuring environmental sustainability; and partnering for global development (United Nations, 2014). In this study there was a lack of understanding from students between the actions they were taking part in during
service learning, and the greater connections to problems and issues locally and world-wide. There was a deliberate effort among service learning practitioners to connect Millennium Goals and service learning participation to rectify this issue. Researchers noted from observations an increase in the connections between service learning to a greater understanding of world issues and problems, in this case, global poverty (Wall & Edmunds, 2009).

These studies all relate different connections between curriculum integration, service learning and personal growth. Like any challenging endeavor, there are pitfalls to embarking on service learning with students. This is what will be explored next.

**Pitfalls to Personal Growth in Service Learning**

There are pitfalls and risks of engaging in service learning projects, especially those that are not well-crafted, thoughtfully planned, or well executed. This section will explore some of the problems that can be encountered in service learning, especially those that may actually increase bias and do more harm than good.

**Othering.** Othering is considered the objectification of another person or group, developing stereotypes, and is often related to race, ethnicity or gender (Dervin, 2011). According to Briscoe, there are three subordinating strategies of othering: the misinterpretation of the other, the marginalization of the other, and the potential resulting harm (Briscoe, 2005).

Researchers have noted that othering and deficit thinking are risks of participation in service learning (McBrien, 2008; Marr, 2014). Specifically, researchers pointed to how international service learning develops empathy, knowledge of social groups and the belief and ability to work for human rights (Hughes, 2014). The author cautioned how these lessons can be lost through experiences that confirm deficit perspectives, and shared a guiding perspective of service learning as reciprocity, not charity. In other words, service learning needs to be
understood as beneficial and equal status by all parties. School leaders must carefully monitor service learning projects to make sure that they feature student empathy, respect, long term involvement, and perspective taking and avoid the pitfalls that increase stereotyping and perceptions of charity (Hughes, 2014). For significant personal growth to occur, students must view the service learning experience from a place of reciprocity, mutual respect, and open communication.

**Lessening democracy.** Another perception is that service learning is actually lessening democracy, because students are doing the service work that some believe is the government’s responsibility (Koliba, 2004). Koliba (2004) attempts to dismantle a claim that service learning is limiting participation in democracy and leading to the privatization of citizens. Crenson and Ginsberg (2002) claimed that civic education used to focus on teaching kids about the electoral process, and now with service learning, the focus was on students performing tasks that used to be done by government. These researchers saw educational institutions as complicit in pushing direct service instead of collective political action. In addition, Koliba (2004) was concerned with planning and developing an ideologically inclusive project that “downsized” citizenship, or in other words, focused on individual action versus collective. She offered five suggestions to deal with this issue, including creating a safe space to discuss politics, sharing the problems with service, encouraging in-depth experiences instead of surface ones, and noting the connections between wider reform and community assets (Koliba, 2004). Adding frank conversations with students about these concerns to curricular planning would help develop trust and the potential for student transformation.

The pitfalls of service learning listed here impact student growth. Research made clear that to be effective, service learning must be carefully planned to make connections between
students and communities, and to provide equal status participation from the providers and recipients of service learning.

**Conclusion**

There were many themes that emerged from this review of service learning literature. Service learning was presented as developmentally appropriate for the challenges of adolescence, which include decreasing levels of engagement and parental communication (Eccles, Midgley, Wigfield, Buchanan, Reuman, Flanagan, & Iver, 1993). In addition, service learning served to engage learners in developmentally appropriate pedagogy and this can in turn lead to greater personal development in middle level students. Service learning was used in several of the studies as a targeted instructional approach for an area of need, such as improving relationships with peers and teachers. Another theme was that several studies found different levels of personal growth linked to service learning in K-16 students. Some findings included early adolescents, and one study even suggested that sixth grade is the best time to see the most personal growth (Scales, Blyth, Berkas, & Kielsmeier, 2000). Student engagement was increased through participation in service learning, and this yielded increased attendance, better academic performance, and higher motivation (Billig, 2000).

In addition, the need for constant reflection in service learning projects, and how that increases positive results for students, both academic and personal, was an important thread in this body of research. Making connections between action in service learning and the deeper meaning clear for students increased the many benefits of service learning. Another theme that emerged was the importance of reciprocity in service learning—viewing service as mutually beneficial to students and the recipients of service. Service learning has the power to reduce bias, to increase leadership skills, and to improve parent and child communication, among many
other academic benefits. This literature review provided a window into the personal growth of students related to high quality service learning projects.

**Recommendations.** While this review provided ample evidence of the personal growth of students who participate in service learning projects, it held only a few examples of studies focused on early adolescents. This gap in the literature needs to be filled. Middle level students, as noted earlier, are developmentally positioned to gain the most from service learning pedagogy. Studies that seek to discover the relationships between early adolescence and service learning are needed to further analyze the possibilities for this teaching and learning tool.

**Implications.** The implications for this literature review include a deep understanding of how service learning can impact students. This understanding can be applied at the school, district, state and national level. In addition, this review lays the groundwork for further study in the experiences of early adolescent students engaged in service learning.
Chapter III: Research Design

This chapter focuses on the research design of this study, including the methodology; study participants, site selection and participant recruitment; positionality of the researcher, and the protection of human subjects.

Why Qualitative Research?

A qualitative research case study was the researcher’s selected approach to explore how service learning impacts early adolescent students. The author sought to explore the lived experiences of students in a service learning program in a middle school and how they viewed a change in their self-concept as a result of their involvement in a service learning program. Qualitative methods such as student and staff interviews, open ended questions, identity maps, and reflective journaling were used to reveal student perception, new learning, and changes in thinking. A detailed qualitative case study, highlighting participant narratives, was needed to describe the lived experiences of students and look for themes and commonalities that could impact their lives.

Methodology

Case study. The research explored the experiences, perceptions, and growth of fifth grade students who were part of a service learning program in a rural middle school in a northeastern town. Various qualitative tools explored the case and how participants were making sense of it. Of key importance to the researcher in this study was how participants perceived growth in their own self-concept over the course of this service learning experience. This resonated with the researcher because the aim is to give voice to early adolescents as they moved through a service learning experience.
In addition, school staff were interviewed to describe their perceptions of the project and the impact it has on students. Data was collected from multiple sources, in an inductive process that is vital to high quality case studies (Yin, 2012). In this way the researcher explored the case of students in the same experience of service learning for their fifth grade year. The researcher gathered this data from several individuals to better understand the case (Yin, 2009). Other data collected to explore the case was observations, artifacts such as journals, drawings, and field notes (Creswell, 2013). These were collected as a regular part of the service learning program. Student work that was completed was part of the data collection. The student work and detailed notes were used to provide rich data on each student’s experience and were a regular part of the service learning program.

**Interviews.** The researcher developed questions based on the research focus about student perception of participation in a long term service learning project. Interviews were conducted at the end of service learning project. The interviews were semi-structured and based on reflections about the service learning experience. A list of the questions for these interviews is in the appendix.

In addition, single interviews took place with three members of the school staff. The principal and sustainability teacher were selected because of their involvement in the project and as professional educators who work with all students in the school. These educators have a wider lens of the whole school community. A core science teacher was also interviewed to gain her perspective on this project and the students as someone within the school community, but not involved with the project or students on a daily basis.

**Identity maps.** Students also completed identity maps at the beginning of the sustainability course. The purpose of using the identity map was a visual way for students to
reflect on their identities and personal concept and yielded insight into how service learning had impacted their self identities and perceptions. An example of an identity map and protocol can be found in the appendix.

**Student work/assignments.** Student work in the sustainability course and service learning project was collected and analyzed.

**Questionnaires.** Students were given a questionnaire at the beginning of the term to capture their feelings about education, their school identity, and their level of confidence and belonging. See the appendix for the beginning of the term questionnaire.

**Participants**

The population of participants for this research were fifth grade students at a rural middle school, in a small town, in a northeastern state. Every fifth and sixth grade student participates in a service learning experience during a sustainability course in his or her fifth grade year. The researcher studied the students in two sections or terms of this class. This was two classes in each section, with a total of four classes, heterogeneously grouped with both genders represented.

40 students were in this cohort for possible inclusion in this study. Detailed observations, focused interviews, and other qualitative tools were used to narrate student experiences in this service learning project. 21 students were part of the study, as well as three members of the school staff.

Participants in the study were given a five dollar gift certificate to a local bookstore for their participation. This was not enough to be considered coercion because of the low dollar amount, but enough to thank them for their participation and to encourage reading. Students who completed the research period were given the gift certificate at the end of the research.
**Recruitment.** All students’ families were sent a permission form in the mail describing their choice of participating in the study. This included a detailed description of the purpose, benefits, and possible risks of the research. Participation was voluntary. Students needed to give assent to be part of the research, and parents needed to return their signed, written permission for their child to participate. Students and parents could withdrawal their permission or assent at any time with no consequences.

School staff were selected based on their involvement in the project and position within the school. Two members of the staff that have been directly involved were interviewed and one classroom teacher with an outside view of the project, but a member of the school community, was interviewed as well. This teacher was recruited from the middle school because she knew the students and had witnessed their development and involvement in the project.

**Access.** The researcher scheduled 10 observations of these two groups of students. The researcher interviewed students individually at the end of each session of the course. This took place in the kitchen, attached to the classroom, in the middle school.

Permission was given by the principal and superintendent of the school and district in the northeast for the site to be used for research purposes.

In order to protect minors, who are considered a vulnerable population, special precautions were used. In addition to gaining parental permission and assent from the child, special precautions were in place to make sure students and families were not coerced in any way as a result of this study. These include the ideas below.

To protect against coercion, families were contacted for permission in writing only, and informed about how participating in this research would in no way impact grades, placements, or any other academic, curricular, socio-emotional concerns. Information about how student
identities were protected and held confidential were included in the written materials sent to parents. The researcher remained open to all responses and provided a forum for open ended questions and answers that followed the lead and focus of the participant.

**Analysis.** A process of coding was followed to develop and explore themes presented in the research.

**First cycle coding.** Codes are a researcher generated construct that attributes meaning to data for later purposes such as patterns, categorization, theory, and essence (Miles, Huberman, & Saldana, 2014). Coding is analysis and deep reflection. This level of coding involves identifying groups of concepts. The analysis began with the interviewing process, because the researcher included reflections, jotting, and other narrative tools to describe the context of the interview. The researcher interviewed students and transcribed these interviews. Each interview was first cycle coded. Codes included descriptive, In-Vivo, emotion, and process coding. Themes that emerged from first cycle coding were developed into second cycle codes. All evidence gathered was first cycle coded.

**Second cycle coding.** Second cycle coding involves pattern coding, or grouping summaries into a small number of categories or themes. These themes emerge through coding and can show causes and explanations; relationships between people, theoretical constructs, and idea clusters (Seidman, 2006). Themes were uncovered in the process of second cycle coding for each interview and other forms of evidence.

**Transitions, equity, gender.** The researcher was careful to analyze student interviews with an eye on issues of equity and gender. There is research about service learning being more impactful for sixth grade females (Scales, Blyth, Berkas, & Kielsmeier, 2000). The researcher explored gender, leadership, and self-efficacy as they related to the student experience in this
service learning program. In addition, students had just transitioned to the middle school. Feelings about this transition and how those relate to the project were explored in the interviews. Lastly, issues of equity between socio-economic classes and different ethnicities were analyzed for themes as well.

**Identity maps, journals, and essays.** The identity maps and other written work was coded with first and second cycle coding as well. The researcher looked for differences and growth between the beginning and end of the program in all the written materials. The final projects were analyzed for similar themes that are reflected in the interviews.

The use of interviews, written work, observations, projects and identity mapping created rich data for the researcher to explore themes.

**Presentation**

It was important that the participants spoke for themselves. Quotes from the interviews were shared in the thesis. Themes emerged and corresponding quotes were presented in the text, in chapter four. First and Second Cycle Coding were shared via charts, text and tables. Observations, identity mapping, and the interviews were also connected with the phases of the experiential learning theory.

**Multiple perspectives on data.** By gathering multiple resources such as observations, identity maps, reflections, projects and interviews, the researcher gained multiple perspectives on the participants and their experiences. Multiple sources and perspectives helped to create rich data and descriptions for which to explore themes. Having multiple modalities for reflection: verbal, written, and visual, students had many opportunities to reflect on their own thoughts and feelings about the program.

**Trustworthiness and Validity**
As Creswell (2013) pointed out, validity is critical to the accuracy of qualitative studies. In this study, the researcher used several strategies to achieve trustworthiness and verification.

**Transferability.** There are research-based components of high quality service learning programs. By showing how the program met those components, and describing the program and setting, this research became applicable to schools with high quality service learning programs in place.

**Member checking.** Throughout the interviews, the researcher restated claims and ideas that students and school staff presented—to check for their agreement. In addition, during the interviews the researcher followed the lead of the participants. As the interviews progressed the researcher asked students to share a question they wished had been asked, or if they had anything they wanted to share, and then included this in the interviews.

**Rich, thick descriptions.** By providing in-depth, thick descriptions of students, and their context with an eye on social, emotional, school and family conditions, the research was valid. These descriptions were based on observations, interviews, and student interactions.

**Prolonged engagement.** As a long time teacher in the area with similar students, there was an inherent trust and normalcy in my being at the research site. Student behavior was not different than it was in normal school conditions.

**Threats to validity.** There are several threats to internal validity that the researcher needed to consider. As a classroom teacher, I needed to share research bias and familiarity. To minimize these threats, I fully shared my biases, and remained open to all research, perspectives, and ideas. In addition, the participants were also undergoing massive changes associated with early adolescence. It was important to make sure that students were prepared emotionally and physically for interviews before beginning. This required a check in before any interviews, and
the ability to reschedule. Maturation was considered during the research period and taken into account.

**Researcher Positionality**

Students begin a developmental decline in terms of engagement, grades and achievement in the middle grade years (Eccles, Midgley, Wigfield, Buchanan, Reuman, Flanagan, Iver, 1993). My problem of practice was centered on learning how service learning affects middle school students on a personal level.

In this positionality statement I will share my background and how it pertains to my research focus. Next will I explore my biases as a teacher. Lastly, I will share thoughts about the researcher role.

**Author background.** I began my first job after college as an environmental educator in a New York State Park. As a non-traditional learner myself, I saw the value in hands-on, field based, relevant learning. Teaching aquatic ecology by wading in streams or dredging up the bottom of a pond, or teaching forest ecology by leading night hikes, gave me a constructivist lens on teaching that I carry with me today as a classroom teacher. I witnessed students engaging in their learning wholeheartedly, living and experiencing their world in new ways.

When I first started classroom teaching, I knew I wanted to keep that spirit of experiential education as much as I could. I started working with community members and organizations and learned about service learning pedagogy. I began leading service learning projects for 60 fifth and sixth grade students at my school. I remember the first time I knew that it transformed my early adolescent students. There was a group of boys who were not successful in traditional schooling. They had a hard time sitting still, engaging in class work, and waiting to speak. They were from a long tradition of families that live off the land, farm, and work on snow mobiles and
cars. When they learned they could study how wolves were eradicated from the northeast, they were ecstatic. This group developed a timeline and a play about when and how the wolf was hunted in Vermont, based on their extensive research. They performed this play on a hillside for the whole school, with motivation, focus and scientific information. This group of students experienced academic success, grew in confidence, and engaged in their own interest driven research in a meaningful way. I knew I had witnessed something extraordinary.

For the last 14 years I have been leading and coordinating service learning at a kindergarten through sixth grade elementary school. The projects have developed over time, and in thinking about my sixth graders about to enter middle school, I wanted to create a leadership and service learning program to prepare them for this transition. My goal was to increase their confidence, engagement, feelings of self-efficacy and community, while giving them key skills such as communication, collaboration, and problem solving. About four years ago I created a six-month leadership and service learning project as a capstone experience for sixth grade students. In this project students learn about school and community needs, their own interests, and apply for leadership positions in the school and community. They have a mentor and weekly job responsibilities throughout the school year. Students create a portfolio of their learning, and share the project with the school and community at the end of the year.

I have seen this project do several things. It has started some students on a particular career or special interest pathway. It has transformed students’ sense of self, of their capabilities, and of their own importance in the world. The power of this project has been clear to me from reviewing student writing, presentations, conversations, and portfolios.

I researched a similar project that is taking place in another school, community and state. I wanted to document student personal growth and development. This research was a powerful
opportunity to show how service learning is both developmentally appropriate pedagogy for middle level learners and how it can help students manage the many changes and transitions they face in early adolescence.

**Positionalities.** The researcher has multiple positionalities, opportunities and roles within this research, which are outlined below.

**Bias.** As a classroom teacher in the role of the researcher, there were many opportunities for biases to emerge. I have a favorable view of service learning in general, and I needed to acknowledge this and find ways to make sure it does not color my research. According to Machi and McEvoy, these “preconceptions, personal attachments, and points of view present both strengths and weaknesses for the research effort” (2012, p. 18). I prevented my personal attachment to service learning from biasing my research by being aware of this potential bias, being open minded to all outcomes, and critical of the research data. In addition, I used the research in the literature review to guide my study, and partnered with my advisor to limit the impact of this bias in my research. Teacher research is an opportunity to provide an inside view of student learning with many opportunities for strong ethnographic research featuring in-depth observations (Cochran-Smith & Lytle, 1992).

**Researcher role.** I was in a unique position to research another school and service learning program while serving as a classroom teacher in a different school. My research was modeled after Michelle Fine’s work (Ravich and Riggan, 2011) by using participants to help shape research. I included research methodology such as identity maps, a questionnaire, and observations. This was an empowering process for students.

If there was no recorded personal growth on the part of students I would need to evaluate my study to see if I can improve it. As a teacher I continue to be a service learning practitioner
and learned more about service learning and being a scholar practitioner throughout this research.

**Conclusion**

This research was deeply reflective of my professional experiences, passions, and observations. The literature review and theoretical framework grounded the study and guided the methodology to prevent biases. By acknowledging and planning for the complex role of the researcher, I gained valuable insight into the possible impact of service learning on early adolescent students.

A thorough case study allowed fifth grade participants to explore their own learning, development, and feelings about a middle level service learning experience and speak for themselves about this experience. It also allowed the researcher to explore student responses in writing, behavior, and other reflective activities. In addition, school staff perception added another dimension to this case study. It was the researcher’s goal to give voice to these participants throughout this study. In addition, experiential learning theory provided a lens through which to view the student responses and perceptions of the experience. It was the researcher’s hope that this chapter provided a thorough guide to the recently completed research.
Chapter IV: Findings

Introduction

Early adolescents face a storm of changes as they move from elementary to middle school. This transition away from smaller classes, trusted adults, and smaller peer groups can present significant challenges. Students are at risk of bullying, depression, and disengagement from academics. Coupled with these challenges are educational settings of traditional junior high schools that may not match the developmental needs of these students.

Service learning is a pedagogy that might better match the needs of the early adolescent student. This case study was designed to explore a hands-on, service learning program during students’ transition year from elementary school to middle school. This research sought to explore how students experience this program, and its possible influence on students’ personal development. Case study methodology was used to gather information about a hands-on, high quality service learning experience with early adolescent students new to a middle school setting. This study chronicles the unique program and course and the effects of this program on the students, in their own personal growth as learners and members of a greater community.

This chapter is organized into three sections. The first is the case description, which explores the town, school, district, and program of study. The second provides student profiles of the fifth grade students within this program for background and context. The third section answers the research question.

Case Description

Bridgeport, New England. Bridgeport is a small town in a northeastern state. It has a population of 5,064 people and sits just off a major interstate. The town has several small businesses in the main street intersection including restaurants, a bookstore, and shops. Many
people travel through this town on their way to work or home from the capital in one direction and the largest city in the state in the other. The community consists primarily of working class and middle class citizens. Some higher income households are also part of the community.

Bridgeport has a racial makeup of 97.80% White, 0.26% African American, 0.12% Native American 0.65% Asian, 0.26% from other races, and 0.89% from two or more races. 0.67% of the population were Hispanic or Latino. 3.3% of families and 6.1% of the population live below the poverty line, including 7.0% of those under age 18 and 4.9% of those age 65 or over. 23.2% of Bridgeport residents have solely a high school degree, and 44.1% have graduated with a Bachelor’s degree.

**Supervisory Union.** This district, or supervisory union, serves students from five different, but nearby small, rural towns. It has three elementary schools. One elementary school is located within the town of Bridgeport and feeds the Riverdale Middle School. The other elementary schools, located within two small rural towns, send its students to a 7-12 middle and high school. The district is spread out geographically over 20 miles.

In 2007, 87% of second grade students in the supervisory union met the standard in the Developmental Reading Assessment, compared to 85% statewide. In 2006, 15.4% of the population was served by special education, while the state average was 15.1%. The high school completion rate in the supervisory union was 91%, and statewide 85%. 5.6% of the students in the supervisory union in 2006 received free or reduced lunch.

**Riverdale Middle School.** Riverdale Middle School is located just outside a small town in a New England state. It is rurally located, bordered by a farm, a stream, and some houses. The school serves students in grades 5-8. It houses 283 students and follows a middle school model.
**Demographics.** According to state tests in 2015, 70% of the students were considered proficient in math and reading. 24.7% of students in the middle school were eligible for free or reduced lunch prices in the 2013-2014 school year. Riverdale students were 97.2% Caucasian, 1.4% African American, and 1.4% Asian in 2015. Riverdale had a student to teacher ratio of 10.5 to 1 in the current 2015-2016 school year.

**Teachers.** At the time of this study, there were 34 teachers at Riverdale. Of those 34, 100% were Caucasian. 79% of the staff was female. All teachers were certified by the state, with eight teachers certified at level one and 26 teachers certified at level two.

**Environment.** The researcher visited Riverdale during the first semester in November 2015. The middle school was a welcoming and active place. Visitors needed to sign in and were greeted by a large slideshow of current school activities and initiatives. The principal stood outside the school each day to greet students as they came off the buses at 7:30 am.

Once inside, the hallways were lined with student work. Students have lockers and were often clustered around homerooms. It was active and lively, but not chaotic. Daily announcements let kids know when to arrive at their first class and offered any updates before wishing students and teachers a good day.

Riverdale was a lively middle school. The kids seemed generally happy to be there, as did the staff. Many teachers stood outside of their classes, talking with students or other teachers between classes. The feeling of the school was vibrant and dynamic. Sunlight streamed into hallways from skylights, and there were seating areas in clusters in the hall where groups of students gathered. The researcher watched several positive and friendly interactions between teachers and students.
The opportunity. The home economics program had its own classroom (with a kitchen), which was part of the applied academics program. However, the administration could not find a certified home-economics teacher for the 2013 school year. So, the program was being phased out and there was an available classroom and kitchen in the school.

Sustainability Program. The sustainability program started in 2013. The teacher of the sustainability course described the idea of her being in the right place at the right time to propose this new program. This core science teacher noted the passing of the home economics program and proposed a 4-year sustainability program for the middle school in its place. There was a small home economics classroom, with a kitchen attached, and some outdoor space that could be utilized, as well, for this new program.

The teacher gained approval for the course as an applied academic course. This meant that it would be different from the core academic courses offered, which included literacy, science, math, and social studies. Applied academics included art, physical education, technology, foreign language learning and music. All students cycled through all of the applied academic courses each year in 5 and 10 week sessions. The teacher would have 10 students in a class and would facilitate a service-based progression of coursework in sustainability. Topics, projects and responsibilities would increase in a progression as students moved through the courses. Each year students would explore issues in sustainability based on their choice and interests and a set of activities designed by the teacher. The idea was that these courses would give an authentic experience to students and allow them to create projects that improve their school and communities.

Table 2

The Sustainability Progression
<table>
<thead>
<tr>
<th>Grade</th>
<th>Main Concepts</th>
<th>Main Projects</th>
<th>Reflection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 5</td>
<td>Defining Sustainability</td>
<td>Taking care of the chickens, learning all the responsibilities</td>
<td>Slide show project</td>
</tr>
<tr>
<td>Grade 6</td>
<td>Sustainable food systems</td>
<td>Preparation of meals using local and organic ingredients</td>
<td>Individual projects on choice topics (e.g., Genetically modified organisms, labeling laws, packaging resources, farm animal welfare etc.)</td>
</tr>
<tr>
<td>Grade 7</td>
<td>Sustainability in action energy</td>
<td>Studying wind turbines, Conducting school energy audit</td>
<td>Letter to Congress (90% renewables by 2025)</td>
</tr>
<tr>
<td>Grade 8</td>
<td>Choice based sustainability project</td>
<td>Individual projects based on student interest</td>
<td>“How to care for our school’s sustainability” slideshow. Presentation includes directions, advice and recommendations for continued care of project. Addressed to next year’s class.</td>
</tr>
</tbody>
</table>
The Teacher. This was a veteran teacher of science. She had a B.A. in Plant and Soil Science, minor in Biology, Masters in Secondary Education (7th-12th), and a Middle Level Science Endorsement (5th-8th). She started teaching middle school science in 2001. She taught at two different middle schools and started a sustainability program for all 5th - 8th students in 2013. This was the third year of the program. She had a total of 15 years classroom experience in middle level science.

When describing her work, she said she provided an experience. She wanted kids to feel “ownership in every piece” of what they are doing. She explained that the fifth graders “take care of chickens, eggs, local food, compost.” Her goal was to make the program “as hands on as possible” and “based on student interest.” She described the program as “an experience.” She continued, “It is all about the tie in, why sustainability is important, based on student interest.”

The Classroom. The small classroom was neat, organized, and lively. Student work was hung throughout the room. Student created projects were hung on walls ---bottle cap art, classroom norms, wind turbines in progress, plant tower, and kid created posters. Charts and posters labeled stations and concepts around the room, all hand-written by the students.

Attached to the classroom was a spacious, well-functioning kitchen and a door that lead outside. Outside the door laid the chicken coop that the 8th grade built last year. It had an elegant design, including a planned snowfall area and nest boxes with hinges. The 5th graders designed the perches. This all stemmed from a video on factory farming chickens. Creating the coop and taking care of the chickens came from the students. It became a student led, interest based project.

Looking in the other direction, there was a small pond the eighth graders built. They rolled huge boulders from the creek to design a pond with fish, a solar powered filter, and seating
areas. The sustainability classes were charged with the care and maintenance of this pond now. It presented many learning opportunities, especially in the fifth grade.

The teacher fundraised for all of this on her own, selling compost and reusable snack bags that the students made. The sustainability program had been self-sustaining. Now she had a budget she could use for materials which was part of the overall school budget.

The teacher worked with fellow teachers and students to make sure she was doing these projects with the school community and getting their input, instead of acting as an entity alone. She said that she wanted to be viewed as part of a larger school community. The teacher described that her programs received a lot of attention and she didn’t want to alienate other teachers. She wanted to involve them.

**The Fifth Grade.** The fifth graders were in their first year in this middle school. They had come from a traditional elementary school and were now transitioning into this larger setting. The students seemed small, even in this small classroom. On their first day they were nervous, trying to figure out what class they would be placed in first, either technology or sustainability.

There were mumbles of happiness or trepidation as the students saw the names on the board indicating their placement. The classes were quickly divided for the five week sessions, and the students split into smaller classes. These smaller classes had between 8 and 10 students in each group.

Table 3

_Fifth Grade Schedule_

<table>
<thead>
<tr>
<th>Time</th>
<th>Team Name</th>
<th>Students in Study: Group One</th>
<th>Students in Study: Group 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:45-8:30</td>
<td>Quest group 1</td>
<td>7</td>
<td>4</td>
</tr>
</tbody>
</table>
*once a week students have a longer block as well.

Fifth grade student profiles

Group 1, Session 1. Fifth grade students were selected, as referenced in chapter three, because they had recently transitioned from elementary to middle school. This was their first year in a hands on, service learning based course. These student profiles were created based on an identity map that each student made in class, a questionnaire, researcher observations, and teacher observations. This first group, session one, began at 7:45 in the morning and ran for five weeks, as mentioned in the case description.

Derek. Derek was an active boy. He described himself as a scientist who liked experimenting. He had an older brother, mother and father. During the first class, he was visibly quaking with energy in his seat in the half circle. Outside, Derek was eager to hold the chickens. He was listening, but walking around, trying to pick one up. He clearly knew a safe and gentle way to do this. He was successful in picking one up. The teacher said that he was a model for holding the chicken correctly. Derek said that avocados were deadly to chickens. The teacher repeated this back and commented that she didn’t know this.

Derek filled out his student questionnaire sparsely. He said school was “sometimes fun” and that he felt “so-so” about it. He wasn’t sure how his family felt about school, and he said he didn’t know what he was looking forward to in sustainability class.

Riley. Riley came to class as a friendly, engaged, and slightly mischievous boy. His self-description was limited to being an older brother, playing soccer and being helpful. In the sustainability lesson, Riley and Derek picked number one when students were picking numbers for an activity. Riley was offered a bowl of popcorn, and the teacher told him he could have as
much as he wanted. The rest of the students would be offered popcorn in the order of the number they picked. Riley took almost all the popcorn, then encouraged Derek to take the rest.

Riley looked disinterested at first, then on the spot and guilty when the teacher said that no one else could have any popcorn. His friend, Derek, looked embarrassed and horrified. Then, Derek got a bit angry during the teacher’s defining of natural resources. She described the popcorn as the world’s natural resources, and the numbered students as generations of people. Derek said to Riley, “Save some for others-- don’t eat it all.” Riley said, “Share yours!” with a smirk. Riley continued to ask for more. Another student, Jim, came over and started taking Riley’s popcorn. He let him. Riley didn’t seem to be taking the situation seriously-- it was hard to tell if that was because he was embarrassed, he wanted to appear a certain way, or if he truly didn’t care. He could have been stuck in this decision.

Riley described himself as kind of liking school, and then saying it was not that fun. He said that school could be boring, but his family really wanted him to go. When asked what he was looking forward to in sustainability, he said, “All of it.”

**Caitlyn.** She was a small girl who settled into class right away. She picked caring for the worm farm as her selected job and got right to work. She gently raked the worm bin and sprayed it to add moisture. She seemed confident and focused. She described herself as having lots of interests including art, dance, and science. She was the youngest in her family.

Caitlyn described school as a great environment to learn. She thought teachers made learning fun and school was where she met her friends. Caitlyn thought entering fifth grade was a “new opening to a different way of school.” Her family liked the teachers at the school and thought it was a safe environment to learn. She was looking forward to learning about and helping the environment in sustainability class.
**Mya.** Mya described herself as always happy, loves animals, funny, and active. She had a brother and a drawing of a frowning face described that relationship as hard.

Mya was conflicted about school, saying she didn’t like it, and then she kind of liked it. She clarified-- she didn’t like math but otherwise it was fun. She liked fifth grade much better than fourth grade, but she said she doesn’t like being with sixth graders. She was looking forward to doing jobs and fun activities like sewing in sustainability class.

**Julia.** Coming in, Julia appeared a bit shy. She started slowly warming up, smiling as she saw the chickens and watching how people were interacting with them. Quickly, Julia became an active problem solver in the class.

She described herself as a tree hugger, an animal lover, active, funny and an artist. She participated in the first class. Julia had sparse descriptions on her questionnaire. She was enjoying 5th grade and liked school besides the homework. She was excited about making little snack packs in sustainability class.

**Molly.** She was outgoing and open to talking with the researcher. Molly described herself as a problem solver who was hardworking. She had many interests that included music, animals, and outdoor activities. She was reflective about her class’s behavior at the chicken coop and said, “Everyone was in the coop with nothing to do. She should have only a few people in the coop. We did better than yesterday.”

Molly said school was boring sometimes. She was excited about entering fifth grade and felt it was fun and cool. She was excited about learning new things and caring about the earth in sustainability class.

**Jim.** Jim appeared to be a very engaged boy in the sustainability course. He was on task and participating, almost quaking with thought and energy on the first day of class. He moved
around a lot, tapped his chair. He participated well. Jim described school as unpredictable. He said that 5th grade was harder than fourth grade and felt okay about the transition to fifth grade. He described his family as thinking “school is awesome.” He was looking forward to seeing the fish, chickens and bunnies in sustainability class.

**Jack.** This boy had many interests including cars, sports, animals and math. He had a brother and cousins he listed in his family. He looked older than a fifth grade student. Jack came in to the first class and seemed ready to problem solve and get to work.

**Anna.** Anna was a self-described animal lover. She also enjoyed art, sports, and reported that she was funny— even leaving a joke for the researcher. She seemed a little unsure entering the sustainability class. She was quiet.

Anna said that school was challenging for her and also easy sometimes. “It’s more challenging because of all the assignments and homework, but school is supposed to be challenging and most of the time it's fun.” She felt that entering fifth grade was more challenging than fourth grade. “Teachers say go on to Schoology and you will see your assignments. They trust you to do that task and it is more responsibility.” Her family felt that school was important. She was excited to learn about the earth and how to take care of it in Sustainability.

**Group 2, Session 1.** This class ran from 10:30 to 11:20 each day. Each group had one longer block each week of one hour and 15 minutes. This longer time period enabled students to be immersed in integrated, in-depth projects for a longer period of time.

**Sara.** Sara was outgoing, loved going outside, and was sometimes shy. She said that when she had distant family she was meeting for the first time, she was shy. Sara struggled to get up in time for school. She felt okay about entering grade five. She loved school, but “just not in the morning.” She was looking forward to playing with chickens and taking care of them. She
participated in class right away, making connections with the teacher and talking about how she needed to wear different shoes to class.

**Sam.** He identified himself as smart, liking math and building fractions. He liked camping and all outdoor activities. He called himself awesome and said he was funny, weird, and crazy. He thought school was easy, and he felt good about coming into fifth grade. He was looking forward to playing with the chickens.

**Ivy.** She thought school was fun, but boring in certain subjects. She liked school, but hated the mornings and waking up early. She said her mom worked at the school, so she had been at school a few times before when she needed her and that helped her feel good. Her family wanted her to do well and love school. Ivy had a lot of interests. She loved animals, art, sports, and math and identified herself as funny. She really wanted a pet and her own bedroom. She was a thoughtful participant in class. She listened carefully and was enthusiastic about the class.

**Madison.** She was the second youngest in her family. She loved being outside and playing soccer. She loved animals of any kind and writing stories. She already loved the chicken named Lovey.

Madison felt good about school. She said her family hated school, even her mom. She was looking forward to cooking something in Sustainability. She hung back in the first lesson, but later that week, she was raising her hand and was completely involved.

**Group 2, Session 2.**

**Ellie.** Ellie had many interests, including being outdoors, with family, and gardening. She stated that she was happy, loved her family, and candy. Ellie loved school, likes all the teachers, and the school’s setup. She thought school was welcoming and fun. She was looking forward to
making a bottle roof for the chicken coop. She readily showed the researcher what she was doing (feeding the chickens) and why each ingredient was important to the chicken’s health.

**Emmanuel.** Emmanuel was interested in engineering, technology and building. He liked to be outside. He loved school, stated that he got good grades and wanted to have a good year. Emmanuel was friendly, smiled a lot and was comfortable in class.

**Eve.** Eve had many interests, including the outdoors, baking, and art. She liked science, especially hands on learning. She thought school could be fun but boring. She was scared to enter fifth grade and was looking forward to working with the chickens in Sustainability.

**Chris.** Chris identified himself as creative, liking building, technology and art. He also liked outdoor sports like baseball, skiing, and soccer. Chris participated well in sustainability, sometimes having so much to say that he interrupted others with his enthusiastic ideas.

**Cole.** Cole thought that school was too hard. He was happy to leave his old school, but not really excited for the new middle school. He thought school was boring and a waste of time. He was most excited about working with and caring for the chickens in sustainability. Cole could be off task but loved the chickens and seemed to enjoy his new name as the “chicken master.” He had never held a chicken before, and this boy who was reluctant about school, now held many of the chickens gently and talked to them.

**Findings**

To understand the fifth students’ experience of service learning, the researcher completed ten observations of students, collected written evidence, reviewed assignments, and completed interviews at the end of the service learning course. In addition, the two teachers and the principal shared perspectives on the service learning course. The findings from this data collection are shared in this section, organized by themes.
The researcher wanted to know how fifth grade students experienced a service learning program when transitioning from elementary school to middle school and how that experience might impact personal development, including self-efficacy and engagement. The themes in the next section describe the experiences of the fifth grade students in this service learning class.

Table 4

*Themes in relationship to the research question: How did fifth grade students experience a service learning program?*

| Students are “doing” throughout the course and are engaged. |
| Students are building competency. |
| Students are constantly problem solving. |
| Students show caring regularly during the program (for chickens, each other, the grounds and the program). |
| Every student has a personal connection with the teacher. |
| The students describe the learning environment as fun and relaxed. |
| Students show increased independence. |
| Students describe pride and feeling good about their daily work. |
| The students find joy and fun in their work and the program. |
| The program has significant school wide impacts. |
| There are very few student behavioral problems in the sustainability classes. |
| The sustainability program is integrated, applied academics and learning. |
| Students are learning to follow through on commitments and responsibilities. |
| This program can dramatically change a student’s perception of learning. |
Students are doing throughout the course and are engaged. If there is one thing happening in this program, it is doing. All the time, students were active, engaged and doing science, math, communication, measuring, and problem solving. The teacher did not have the students sitting for more than 15-20 minutes at a time. Most of the time the students were working in groups, completing their jobs, problem solving, researching, building, or brainstorming ideas. Worksheets and seated work were rare. A fifth grade student described the doing, or as he called it, kinetic learning:

I like the way the way Ms. Jamison teaches, it's not just like reading from a textbook, you get to learn kinetically, you get to do what you need to with your hands, it's not just reading or looking at it. You can actually see it, and feel it, and do those jobs and feel what it is like.

The principal noticed this as well. Developmentally, he stated, middle level students have a need to move and be active. He said,

I think early adolescents need to move and the teacher, I think, both the topic, the space, the outdoor classroom, from the chicken coop being outside, the kitchen being in another room, the solar panels being out there you know, um, I'm trying to get all teachers to get kids to move more, even if it's like a movement break, or a brain break in class. I think we ask early adolescents to sit there and listen to adults far too often.

The theme of doing spanned across most interviews and observations, showing up as students described the program as “fun” and “not boring”. The teacher, on the first day of class after connecting to students and explaining jobs said, “Do you want to start doing stuff?”

“Yes!” was the cry from the class.
The teacher said, “It was the 8th graders who build the chicken coop. Here’s how sustainability works-- in this class you will do things to add to, build, make things to build the program. Do more, add more. The next group continues that work that you started.”

Instantly, the group knew the doing was up to them. They knew that if they didn’t take care of the jobs, if they didn’t problem solve, the chickens, the program, and the tradition would not continue. In this way, the chicken coop was a microcosm of the concept of sustainability. Students knew that they had the power to improve the chicken coop environment, the pond, the worms, and the classroom space, both indoors and out. The teacher made the connection that their care, responsibility, and problem solving was the thing that will continue the program and lead to a more sustainable world beyond. She said, “The eighth graders built the coop for the chickens and for you. For the next generation.” This came on the heels of a lesson about the definition of sustainability, which is about conserving natural resources for the generations to come. This direct link was learned through experience and reflection.

The kids noticed the differences between Sustainability and other classes. Caitlyn commented:

I’d say in math, I’m working on a worksheet and in Sustainability, we really don’t do-- only in the beginning do we do a worksheet. We are doing jobs, and we are watching movies about it. We are learning about it. We are doing something. We are not just doing a worksheet or having a class discussion, which we do in LA (language arts), and IA (integrated arts) and worksheets in math. So it's definitely a different perspective of learning. To be doing something active. I really, really like math, and it's fun to me, but this is like, you’re going outside, and you are helping feed the chickens. You are doing the recycling, and the compost.
They reveled in the *doing* of this class. Each child commented on some aspect of *doing*, either in class, in the interview, or in their written reflections, and the principal and teachers commented on its importance as well.

**Students are building competency.** The students were in charge of the entire chicken coop and the pond. Several tasks emerged and the students knew from day one that they were the ones that needed to carry on the program and the caring for the outdoor elements. This was their legacy. The students had to become competent to continue the program and legacy left by the others before them.

How students were building competency was evident from their end of term slide show projects. Anna said,

> I am really proud of finding a way the chickens could be warm in the winter and working as a team with my class to figure out the solution to the pond. The pond was a big job. Since winter was coming, we had to drain the pond. We knew that, but how were we going to keep the expensive tarp underneath from freezing? Our class came up with an idea of putting a tarp over it. It was a big job because we had to remove all the rocks, and plants and, the hardest part of all, the fish. At the end, it was a success and everybody felt good about what they had accomplished.

During the second session, the group was struggling with the water dispenser. The students had tried three times on the prior day to fill and flip the water dispenser for the chickens. Each time, water came shooting out of it and on to them. They figured out a way to plug a hole that had been causing the water lose pressure and stay in the container. Flipping the dispenser quickly remained a challenge, as it was big and awkward for students to handle.
Chris decided that he could solve the problem. He filled a smaller container up with water at the sink, then poured it into the larger dispenser. He lugged it out with great effort, then flipped it over quickly. None of the water splashed out. He triumphantly called, “I did it like a pro!” Chris had also been carrying around the data chart, reading the data and noticing how different each nesting box felt in temperature. Chris was displaying independence and competence during these activities. He was engaged completely, moving from one task to the next. His comment that he “did it like a pro” illustrated pride and the building of competence that students experienced regularly in this class. Another student chimed in about her job, “I did it yesterday by myself!” The students gave tips to each other about how to do things better and make adjustments. They were taking feedback from each other, accepting it, and becoming more competent each day in this class.

Another example of competence building was a boy named Cole. He seemed a bit unfocused and provided the wrong name in the class introductions to be silly. He didn’t seem ready to engage in the class. Once outside, though, he was completely engaged with the chickens. He had never picked up a chicken before the class, but he quickly learned how to--with great care and skill to protect their wings. He proclaimed that he was “the chicken master.” He held the chicken carefully on his hip and walked over to the researcher, talking softly to the chicken. This boy, who seemed like he had the potential to misbehave and appeared uninterested in school, was carrying a chicken gently over to a researcher. This was competence and caring in action. He learned a new skill, learned how to apply it, and now loves it each day.

During the research, students developed competencies each day, and this was observed directly. Students encouraged each other and described feeling good about their work. It felt good to be competent and these students demonstrated that with comments like, “I did it!” “The
egg is still warm!” and “You can feel the difference in the nesting boxes!” Gaining competency emerged repeatedly in the observation periods as well as in student interviews and project work.

**Students are constantly problem solving.** Students in this class were active problem solvers. The teacher did not answer questions about what they should do, or how. She posed questions back to the students. She used an inquiry and problem based model. For example, she said, “I wonder how we can get that door to the coop to work better? Do you think someone with an idea can work on improving that?” She invited creative problem solving throughout the classes the researcher observed. These repeated experiences with problem solving provided a different modality for students to learn. Many students are used to adults solving problems for them and answering their questions. In the sustainability class, an inquiry model was frequently used, where questions were posed to students. The questions were sometimes used to guide students, but they were also based around student choice, voice, and inquiry. The school staff highlighted the importance of problem solving during the interviews, and students reflected on its importance in written reflections and in interviews. One boy in the study enjoyed this approach. He noted, ”It’s definitely more fun. I guess because you learn in a better way. You learn by being active and problem solving. In other classes they tell you what to do. This is how you write a paragraph or something.”

“In other classes they tell you what to do,” he said. In this class, their own curiosities, sense of responsibility, and problem solving guided their decisions. In one instance when the researcher was observing, the students came up with a detailed experiment to improve the chickens’ nesting boxes. A team of girls researched heating pads, discovering one that used body heat and required no electricity. Another team used a staple gun to attach shiny insulation onto the coop to reflect and gather heat. Another team monitored the location of the heating lamp.
These teams decided to keep data on their nesting boxes. What temperature were they? Which nesting box did the chickens prefer and lay eggs in? These were questions they generated themselves, and they built a data table to record the information.

Students were constantly puzzling out ways to improve the conditions for the chickens. They regularly worked to enhance the coop that the eighth grade students had originally made. One girl shared this about her recent problem solving,

We were excited. Me and Ms. Jamison. I don’t know if you actually knew that, because it was kind of recent, but we were thinking, you know how the heat lamp has a red lamp? And the red creates light? And there is another kind of heat lamp that is just purple and it doesn’t create any light? We were thinking, let’s see which one they like better. Because they might like one better. More heat, I don’t know.

Students were then encouraged to take data and solve the problem. This problem solving had the potential to transfer to other parts of the students’ lives. One girl reflected about the impact of problem solving opportunities on her education,

Yeah, like you don’t just do one problem. There’s going to be a lot of problems, in the road ahead, so just fixing one thing that’s quick, and then doing a larger problem and then going up. It’s easier in sustainability because then you get to do it outside of school.

And that’s just sustainability. You don’t just stop when you are doing something and take a break and go on vacation. You go from problem to problem to problem.

She went on to say that problem solving skills will help her throughout her education and, as an adult, with the problems she might face in life. She was seeing the connection between the class and potential challenges she might face in her own experiences.

Another student worked to solve a problem with the chicken coop:
In Sustainability we are learning how to take care of the earth. We wanted to help take care of the chickens to start. How will they sleep if they have no roosting bar? So our class started to think about ways to fit the roosting bar in the chicken coop. We measured the dimensions of the coop, found the right plank of wood and screwed it into the chicken coop. But we had a problem with the roosting bar there--they would poop right into the water. We wanted to move it into a place where they would be comfortable. We eventually put it into the other corner. The chains holding it up off the ground were cold, so I wore gloves.

Another girl, who was problem solving, described trying to keep the water from freezing in the coop,

I did a water bowl project. I needed to figure out a way to keep the water bowl from freezing. I came up with the idea of if insulation keeps the coop warm the it could keep the water warm, too. I also am doing a plastic water bottle insulation roof.

Students were constantly solving problems throughout the course. No idea was turned down if it was reasonable, and even ideas that were not reasonable, were considered and discussed. The teacher encouraged the students to test their ideas and make adjustments based on their own data and observations. She would not answer their questions but guided them toward active problem solving. The students spent most of each class sharing ideas, testing them, taking data and evaluating what worked. This experience in problem solving, like a participant noted, has the potential to help them with the problems they face in other academic courses and in life.

Problem solving was a theme triangulated in this research, from direct observations, school staff and student interviews, and noted in written reflections by students.
Students show caring regularly during the program (for chickens, each other, the grounds and the program). Students in this class were asked to care. Immediately, the teacher said, “You will build something. You are handing down the service and the responsibility, handing it down and leaving things for the next generation.” This created a culture of caring and responsibility in the students. They all paid close attention to this message. They were the custodians of this program, this space, and the teacher told them this right away. Student noted the importance of caring in their interviews and written work, and it emerged as a theme from the interview with the principal.

The school principal noticed the effects of the culture of caring in a boy that had trouble working with others. “I see this both directly and indirectly, like I have a young man my den (homeroom) who is an 8th grade boy, for who I was wondering for a long time does he have a caring gene in his body?-- But when I see him out there with the chickens and he picks them up, now I see it.” Sometimes it takes caring for other living things for caring to emerge in students. It is much harder to show caring and compassion for other early adolescents for some students. Caring for the chickens was a direct experience that these students had the responsibility for each day.

Another boy defined sustainability as “how to take care of stuff, take care of chickens, worms, how to drain a pond with your mouth, and mostly taking care of things.” The researcher asked him, “So how does it feel to take care of things? How does that feel to you?” He responded, “It feels better than just doing nothing.”

The power of caring for other creatures was felt by all of the students the researcher observed. A group of students worked on a slide show at the end of the class and said this about caring for the chickens:
Our sustainability class loves the chickens! We love taking care of them, and we also love feeding them. But we especially love holding them! We love doing all the jobs, and we are really interested in everything we do in Sustainability so we love coming to sustainability everyday.

The students wanted to take care of things. They showed this in their care of the outdoor space in Sustainability. Because there were other living creatures relying on the students, the need for direct care was evident and clear to the students. They enjoyed it. They felt the magnitude of this purpose.

Caring for animals is a safe way to try out emotions and feelings. With this practice, students may be more willing to try these feelings out next with humans. The opposite is also true. Kids who hurt animals are a major red flag for potentially hurting humans. The takeaway here was that caring for the chickens was a safe way to show kindness and empathy. Humans talk back and have the potential to mock, laugh, and make fun of emotions. Chickens are more predictable in their responses and not emotionally hurtful. Predictable responses may help foster the building of confidence and a willingness to reach out and try new emotions in a safe setting.

On almost every questionnaire, the students identified taking care of the chickens as one of the things they were most looking forward to. In the interviews, taking care of the chickens was a constant theme. This experience of caring for other living things and for the class community has the potential to improve how these students care for others, animal and human, in the future.

**Every student has a personal connection with the teacher.** The teacher in this class worked to connect with every single student. As they entered for the first class, she asked, “Now, do you have any siblings?” and she worked to remember who they were and to notice how the
child was different or shared qualities with their siblings. If they didn’t have any siblings she knew, she connected over other student interests, such as hockey or karate. Some of the students knew her young sons, and they talked about that. She connected with other students about their parents and asked how they were. Each student was given a moment with her direct attention. This was possible because there were only 10 students in the room. She told the researcher that, “This takes time, but it is so important.” Connections mattered.

She used humor to connect, as well, talking about how it was important to have different shoes when entering the chicken coop. There was chicken poop out there and that’s just part of working with chickens. She commented on the stylish boots two of the girls were wearing, saying that they might want to bring in an old pair of shoes and leave them in class. She noticed them, joined with them, and connected. This happened over and over when the researcher observed.

The students describe the learning environment as fun and relaxed. When the kids entered, music was playing. They were encouraged to do what they needed—each breakfast, sign up for jobs, and start working. Their buy-in was evident. They could move at their own pace and didn’t need a lot of teacher instruction. This created an environment that was comfortable, positive and engaging.

The researcher noticed students eating, conversing, and moving toward their jobs, all without teacher talk and directions. Once students knew how to do the jobs, they could move to them independently. The environment was loose but structured, respectful, and fun. Students appeared comfortable in these classes.

Students show increased independence. Early adolescents, as they mature and move out of elementary school and early childhood, crave independence and free agency (Eccles,
Midgley, Wigfield, Buchanan, Reuman, Flanagan, Iver, 1993). Once students learned the jobs, and that the responsibility was theirs, they went about independently doing the jobs and problem solving any issues that came up.

For example, when students were trying to “put the pond to bed” for the winter. They wanted to protect it from damage from the snow and get it ready for spring. Some of the boys tried to spread out a tarp and cover it, but one girl thought it wasn’t as well done as it could be. She took over the design of the tarp. She said she was fine to do it on her own. She thought the boys rushed. She stretched out the tarp, placing rocks around the edge. She told the researcher she did this at home with her wood pile. The same girl said about the class, “I feel independent. A lot more independent than usual, even though that’s weird because I am working with a group. I feel a lot more independent-- like I know how to do stuff now.” This independence and feeling of competence is a critical part of self efficacy and grit. Girls, especially, who sometimes lack confidence and self efficacy in early adolescence, need to experience success, independence, and feelings of competence (Pajares & Schunk, 2001). Experiences like this that foster student growth, independence, and competence could be a good developmental match for middle level students, particularly females, who are facing academic and social pressures that challenge their personal development.

Another way students experienced independence and competence was in the kitchen. They had the opportunity to bake muffins using the eggs from the chicken coop. Mya said, “Baking was awesome. I am such a baker and this was so much fun. I was so excited to try what we made with the chickens’ eggs. This was something I would like to do again because, like I said earlier, I love baking.” This activity built students’ independence and sense of competence
because they learned a life skill and connected this to the work they had been doing in class, taking care of the chickens.

Independence was built from the moment kids walked into class, in subtle and overt ways. Right by the door was a white board that listed all the sustainability jobs, which included taking the temperature, letting chickens out, refreshing water, filling the food dish, shoveling snow, collecting eggs, cleaning nesting boxes, freshening sawdust, managing food scraps, cleaning the kitchen and floors, emptying compost and recycling bins, caring for the worm bin, pond, and garden tower. Students signed up at the beginning of class to complete a set of jobs. This first act was one of choice and independence. When they wrote their names down, students were committing to do the job. They were proclaiming their choice, independence, and competence. The teacher noticed that the job sign up board became much more than she had anticipated:

I think they really, really love that that idea of walking in, and knowing that they have 10-15 minutes to just sort of show what they can do. And, take that on and write their name on the board-- it’s so funny, that board-- writing their name on that board is such a thing. And that was just my own mental, so I would remember what we had to do everyday. And that became something that I had no idea would be such a thing. And it’s really an ownership thing, and um, having them like assign their name to something, and then walk away knowing that they can carry that through. I never saw the power in that.

The students developed independence and confidence in their ability to complete a job. The teacher had put her trust in these kids that they could do this work, and they showed her what they could do when they signed up to complete a job and follow thorough.
Students describe pride and feeling good about their daily work. “Actually it makes me feel really good. All this bad stuff is happening to the environment, and I am helping stop it. It’s kind of like a powerful feeling.”

This quote illustrated a pervasive feeling amongst the students. They felt proud of their contribution to sustainability, to the program, to the concept, to the future students. They felt good about their competence and their problem solving. Students reported feeling good about their work in the class, in their interviews, and in reflective work at the end of the class. On a final reflective slide show created by each student, a girl shared:

Sustainability made me feel really good about myself, and really proud of myself because I accomplished things that will help the chickens, and I understand how to take care of the earth way better than I did before.

Students then made connections between their daily work and the school community. They felt good when they were part of something larger than themselves—when they felt their work was contributing to the improvement of their school and community. Another girl continued,

Well, it feels really good. We get to produce some eggs, we get to go and see other people eating our eggs (in the cafeteria) from the chicken coop that we collected, or other classes collected, and it makes me feel really good because it’s helping the earth, getting these eggs for our school.

These students appreciated the opportunity to feel important and that they were making a difference. Early adolescent students are developing a sense of social justice and tapping into that makes these students feel good.

The students find joy and fun in their work and the program. A boy named Emmanuel signed up for one of the jobs that was not as popular as the others. Most students
wanted to let the chickens out, collect eggs, or feed the chickens. That day, he signed up to “zoom broom” the classroom and kitchen. The rest of the students went outside to do their jobs. The teacher went back in and found Emmanuel dancing around the room with the zoom broom, the music turned up, singing loudly as he did so. The teacher did not ask him to turn it down. She came outside and told the researcher what he was doing. In that classroom, a spontaneous moment was happening with a student. He was feeling useful, competent, and joyful. He was participating, helping, and getting to dance and sing at the same time. This left the researcher wondering, how many times do students have a chance to be joyful in school?

Joy was also part of the learning environment. Students laughed and joked with the teacher constantly. The teacher had music playing when kids entered the room or during any work time. This helped to create an environment that was joyful and playful. Students and the teacher were overheard by the researcher saying, “I love this song!” or “I know this one!” This built a positive environment for students.

Coupled with joy, all students frequently commented that the sustainability course was fun. Students looked forward to coming to class, and this showed when students greeted the teacher, interacted with other students, and independently did their jobs and shared ideas.

“If I walk into math I feel like this is just not going to be fun. Because I don’t like math. But when I walk in here, it's like this is going to be more fun than going into math class.” Comments like this one were shared in interviews, written work, and overheard by the researcher.

The concept of choice seemed to increase students’ perception of the class being fun. For example, a boy named Jack said, “The teacher definitely made it fun. She gave us like choices on what we can do, like do your jobs and then you can do this, this or this. You work on either of
those 3.” When asked how he felt about having those choices he said, “It was definitely sort of fun. Like I said before, those other classes don’t really have those choices.”

During the last observation, the researcher heard students who wanted to keep working on the insulation project (insulating the chicken coop with empty water bottles) conspiring how to get together and keep working. They shared ideas such as meeting in the room over lunch, asking for permission to meet up during study hall, and one student even suggested missing PE to continue. The teacher reminded them that they could not skip PE but was clearly happy that they were motivated and having so much fun that they did not want to stop brainstorming and problem solving.

**The program has significant school wide and community impacts.** The work of the sustainability program impacted the wider school community in many ways. Their daily work was integrated in every way possible with improving the climate of the school and creating ways to make it more sustainable. During an interview with a different classroom teacher in the school, she noted:

The artwork that is on the staircase that says *reduce* that was a project that came through her, um, program that came through every single advisory in the school. And so every advisory group was educated about plastic, even bottle caps and bottles and recycling to some extent. But then every advisor group had to collect a certain number of bottle caps, and I think there was a little prize for the advisory who collected the most and she would tell us what they needed and then to see all of those bottle caps put together in this beautiful piece of art that is then displayed for the whole school and the whole school knows that they played a part in that. It’s pretty cool.
The researcher noticed this piece of art when climbing the stairs to the sustainability classroom. It was a giant, colorful mural that spanned across the wall on the stairs where all students see it each day. It featured a large earth colored footprint with the word reduce written in gold letters. The entire mural was created with bottle caps and the sustainability students led the project.

The same teacher noted other school wide impacts of the program:

Some of the programs in this school that we have seen because Ms. Jamison has touched it, it's just rippled throughout the community. The composting program was piecemeal at first, but then she, through that class, had students in all grades educated and in the cafeteria, um, cleaning up, collecting, working with kids if they were composting wrong, um, she’s also made this outdoor classroom, with another group of kids, grade 6, 7, 8 so now the whole school has access to that outdoor space. Um you know, she’s building. She has a project going on right now for building a greenhouse. Those kids are going to be an integral part of that.

In addition to building and managing the chicken coop, the students have helped organize and refine the school wide composting and recycling programs. Led by students, this change had become part of the school culture. One student told the researcher that she could tell which students hadn’t had Sustainability yet because they didn’t know when or how to recycle and compost and needed help from other students. They also hadn’t been taught yet why it was so important.

Another school wide impact was removing the bottled water vending machines from the school. According to another teacher at the school,

It was a water bottle vending machine. There were 2, one in the cafeteria, and one down by the gym. It was Dasani water bottles. And they were there for years. Because of a unit
she did investigating water bottles in terms of consumption, the oil, the pollution, oh gosh, what an impact that had. Kids were crazy over it. And, ah, so that movement, created a movement, a school wide movement that ended up getting the machines out of the school. Um, and she took, I don’t know, they raised money or they took money and they ended up buying reusable stainless steel water bottles. I wonder if she still has hers. I have mine. And giving one to every kid in the school. It was a beautiful design. The kids designed it and it was metal. It has a water droplet on it and the earth in the middle and every single kid in the school got a water bottle. And, you know, they had this shared victory that they all celebrated together. Um, that was the water bottle project.

From the school wide art, to the composting and recycling programs, to giving the cafeteria eggs and removing bottled water from the schools, this program had many school-wide impacts.

The program also impacted the wider community. The teacher described a project that her eighth grade students completed:

We work with businesses. Last year one of the 8th grade things, the new recycling composting act um, so it’s law, now, that we are composting and recycling, and so businesses, as of last summer had to switch over. Everybody had to compost and recycle. By 2020 all households will be. There is this timeline depending on how big your growth is. So, kids were curious if businesses in Bridgeport knew about that. They developed this whole project of businesses. They made these packets, laminated information things, and stickers, and a logo, and these little community binders. They called everybody, and then we went and visited all of these places and the kids told them about how to recycle, and how to compost, and who to contact, and what the law was, and how to set them up, and
where they could get funding. And you know, they contacted Grow Compost and said, ‘Hey, we just went to all these businesses, gave them your name, you might be getting some calls.’ It was really cool, and so our signs kind of started to go up in a few community store fronts, and we were able to get three businesses that were not composting yet, three restaurants, to start composting. So that was cool.

The direct impacts of this program on the community were clear from this example. The benefits were reciprocal. The community and the students mutually benefited from this type of partnership.

**There are very few student behavioral problems in the sustainability classes.** There were few behavior disruptions in the small sustainability class. This could be for several reasons. The temperament of the teacher was one. She was calm and flexible. When a student was tapping on his desk during a class discussion, she tended to give him a minute to realize this was impacting others. Sometimes students stood up during those discussions or moved seats. As long as they were participating, movement didn’t faze her. She didn’t get into power struggles that other teachers sometimes do. Occasionally, she gave a redirection to a student, but it was always in a calm, positive and upbeat manner. She frequently used humor to diffuse situations.

Her classes also lacked behavioral problems because students were too busy doing and feeling ownership over their work to misbehave. Another middle grade teacher in the school noted:

So when we get students every year from the elementary school, they come up here. We always get a list of the students and I don’t know them. And she sees all of these students and so I will go to her and say ‘Can you tell me a little about these kids that are coming up?’ Um, and what I am looking for, you know, are how do they learn, you know, are
there any that have behavioral difficulties that I should be aware of? And she will know those kids, but she will also point out that you have to have them, again, engaged and involved. She just doesn’t see those (negative) behaviors in her program. Because the kids take ownership for what they are doing. And they are so proud of it. For everything, they have a role. They have a purpose each day when they go in there and so their presence in that class makes a difference in what they do.

The researcher did not see many behavioral interruptions in the classes observed. Some kids interrupted each other, or spent an extra minute completing a task, but they were focused, positive and productive throughout the course.

**The sustainability program is integrated, applied academics and learning.** With increasing standards in academic areas, there is a very full math curriculum at every grade level. Each separate subject has specific and teacher led goals and standards (in many locations, the Common Core). The real world is not segmented like this. Problem solving and innovation do not have particular subject areas. Natural learning knows no boundaries of subject matter.

During one observation, the students were evaluating a new piece of roofing. The last test piece had started to disintegrate. The teacher asked them how the new piece of roofing was different from the old one. They noticed the different properties, length, width, and depth of grooves. This is visual math. Then the teacher asks students to estimate how far the roofing reached, and the gap that is missing. Students estimated that distance, with estimates varying widely. A student was asked to get a measuring tape and climb up to check the distance. She determined that it was 10 inches long and reported this back to the class. This was applied math. Concepts included estimation, measuring, and observation. These skills transcend any academic subject.
Next the students practiced their teamwork by using four kids to carry the heavy roofing inside. This was no small task. All the students had to work together and communicate.

Once the roofing was inside, the class brainstormed that the amount of water bottles needed for new roofing and how it would be different because of the different dimensions. One student measured with a bottle and determined that the new roof would take half as many bottles. The teacher said, “We have to know how many bottles we will need. Can we have one team--take this and take these bottles and estimate? I’m going to have you work together on this challenge. Do you think you could problem solve this?”

“Yeah!!” came the call from the class. Kids started shouting out ideas, most math and problem solving based. One student, Ivy, and two boys decided to take this applied math on. Ivy started counting bottle lengths by placing them on the vertical edge of the roofing and then looking horizontally. She then counted 16-20 bottles on the horizontal edge.

“Okay,” she said, “I am estimating about 160-200?” She looked to her group for confirmation.

“How about 170? It seems like a better estimate,” commented a peer.

“Okay, 170,” confirmed Ivy.

Ivy knew to multiply the vertical and horizontal axis to get the surface area. This is the highest level of knowing a math concept--to be able to decide when to use it, apply it to a context, and use it to solve a problem.

The students then had to visualize the new roofing on the coop. Where is the gap? How might this impact the chickens when it rains? The students realized that the rain would fall directly on the roost area and on to the chickens. This would not work. They brainstormed re-positioning the roof section to cover the central and vital parts of the chickens’ living space. Ivy,
who had been active in the group doing the applied math, was the one to suggest moving this piece. She is gaining competency in applied math and integrated problem solving. She was also leading this group, so she was developing her leadership abilities, as well. This can have positive impacts on her feelings of self-efficacy in this class and beyond. The class decided to change the position of the new roofing and to use other reflective insulation for the gap, which would now be at the bottom of the roofing space.

This is one example of integration taking place daily in this sustainability program. Passionate, innovative, problem solving-based learning is truly integrated and takes time. It comes from student interest, hands on experiences, inquiry and innovation--all of which were present in this program. It is worth noting that, each week, the classes had a “long block.” These long blocks of time were essential to experiential and integrated learning.

The students, of course, didn’t recognize that they were participating in integrated learning or applied academics. One student said on the way out the door of sustainability class, “Now I have to go deal with reading and math!”

The teacher looked forward to the day when Sustainability was not a “unique special thing” but is integrated across the curriculum, K-12. She said:

I just see it as I wish it didn’t feel like something that, how do I explain it, it should just be a no-brainer. This is just part of what you learn, because it is an important part of being a person on this planet, like this isn’t a crazy thing, this is just part of your education. Every body should know their place in the world, and their place in the dynamics of our earth system, and how we rely on it. Yet how we impact it, on the same level, that’s not a crazy idea to me.
While waiting for school-wide integration, the program currently combines academic, social and emotional learning concepts and contexts to create a truly interdisciplinary course.

In addition to discovering themes in the program, the research question sought to discover the impacts of a service learning program on early adolescents’ personal development, focusing on self-efficacy and engagement. The next section describes the impacts of this case on the students in these areas.

**Students are learning to follow through on commitments and responsibilities.** At this developmental stage, early adolescents typically participate in strong, intense and often short-lived interests; prefer to interact with their peers; and are partial to active versus passive learning (NEA, 2016). As most middle school or upper elementary teachers know, they should not expect to tell early adolescent students a rule once and assume they will follow it. Their impulses still guide many of their actions and following up on details can often be a challenge.

In terms of the sustainability class, students were practicing following up. There were many high interest and exciting moments in the class, but students needed to finish all the jobs and responsibilities and make sure they are following through to complete tasks. This was not automatic for many students. For example, one student signed up for collecting eggs, then ran out to shovel snow instead. Another student collected eggs excitedly, revealed that there were 11 eggs and accidentally dumped them on the kitchen counter. The teacher had to remind him to rinse the eggs, collect the data, and put them away. This was not automatic for the student, but clearly important to preserve the eggs, to consider the data, and to complete the task. The teacher had to remind students regularly. In one observation she said, “Stop! Look around. Did you complete the tasks that go with collecting eggs?” She later asked the students to reflect, by saying, “Think in your head right now. If I were to ask you individually, if you wrote your name
on here, if you followed through, completely. Could you answer yes in your own mind?” The students needed this anchor to reflect on their own participation and to learn to follow through. She was modeling self-talk until the students can learn to do it on their own.

This kind of practice has applications that can last a lifetime. Early adolescent students need to learn that their actions have consequences, and they need to follow through on responsibilities, even when they are hard. Service learning programs encourage students to follow up on tasks, to see them through to completion, where they might not have the opportunity otherwise. They are learning to control their impulses, to lengthen their concentration, and follow through. Providing experiences where they have to do this builds their internal voice and skill in this area. Following up and completing tasks is something students will need for their lifetimes, in their academic, personal and occupational experiences. Providing a safe way for students to complete authentic tasks could build their competence, independence, and confidence.

**This program can drastically change a student’s perception of learning.** One student who came into this program did not enjoy school or see herself as liking learning. She came from a difficult home environment, with her mother in and out of incarceration. Her father is her main caregiver and had recently divorced from a stepmother. She said:

I didn’t like school. I didn’t want to learn anything when I came here. Now, it is almost the end of the year, and I feel like it’s only been a month. I think I have changed because I am actually wanting to learn. And most kids don’t.

When asked what changed, she said:

Myself. My whole self. My whole personality changed from not wanting to learn to wanting to learn.
The researcher asked why, and she said:

Because Sustainability came and then-- well, my sister, my ex-step sister, Lisa, she told me about Sustainability when she came here. My dad got divorced from her mom like four years ago. But 2 years ago when she started coming here she was just like, ‘Sara, there is this sustainability class you might like when you come to Riverdale.’ I was like cool but I didn’t really care. But then when I came here it was like-- I love this class.

This student realized her “whole personality” had changed, from not wanting to learn, to wanting to learn. When asked if she was going to carry that forward with her, almost like a tangible thing, she said, “I’m going to try and--keep it. And just remember that I’m going to be coming to Sustainability next year.”

It remains to be seen if she will carry this new engagement in learning forward with her into other classes. The potential was there. She also knew that no matter what happened in her other classes, she would have the opportunity next year for another round of service learning in the sixth grade sustainability course. Many students in the study reported already looking forward to the course in the following year. It is unclear what impact that had on the students’ engagement and self-efficacy in other courses, but the potential for increased engagement, self-efficacy and success exists.

The fact that one student had a drastic turn around her in perspective of herself as a learner is powerful and illustrates that middle level students are becoming. They are in states of great flux and their behaviors, attitudes and perspectives are malleable. If educators can provide positive learning experiences for students, there is the possibility that students may ignite a passion for learning that did not exist before, as in the case of this particular student.

**Summary of themes**
Many of the themes listed in the findings are overlapping and integrated. It is important to view them as part of a functioning class ecosystem, with each reaching into and helping the others move along. It is clear that the program is effective because of the many themes shared above. They are all needed for the program to have the wide impact that it does. These themes answer the research question, to describe how students experience a service learning program. Next, the impacts on personal growth (engagement and self-efficacy) from participation in this program will be shared.

**Effects on Self Efficacy**

The next section discusses how participation in the service learning sustainability course led to increased feelings of self-efficacy in the participants in this study. The research divided into aspects of learning known to increase self-efficacy as first outlined by Bandura (1987).

Table 5

*Effects on Self-Efficacy*

<p>| |</p>
<table>
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<tbody>
<tr>
<td><strong>Students have mastery experiences throughout the program and experience a growth in their sense of competency.</strong></td>
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<tr>
<td><strong>Students experience positive social modeling from other students.</strong></td>
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<tr>
<td><strong>Students experience social persuasion (encouragement) from the teacher and the students.</strong></td>
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<tr>
<td><strong>Students experience a relaxed, fun, engaging learning environment.</strong></td>
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**Mastery experiences and competency.** The mastery of challenges is critical to the development of self-efficacy in students. When students experience success regularly while facing challenges, they build their sense of self-efficacy and reduce negative behaviors that can impact academic and social success. This applies to the sustainability course because the researcher witnessed students constantly trying different approaches, learning, adjusting, and
experiencing feelings of success. The teacher would increase these feelings by saying, “I had never considered that way,” or, “That was completely your idea-- and it worked!” Students experienced mastery of caring for a community of chickens. They learned their jobs and executed them each day with precision, focus and motivation. Students sometimes needed reminders to complete tasks. They were still developing their sense of following through and completion. These mastery experiences increased their feelings of self-efficacy. This was noted in the students’ comments in the sections above, stating that they felt good, more independent, and more able to solve problems both inside and outside of the sustainability program.

**Positive social modeling.** Social modeling is the idea that witnessing someone succeeding will increase someone’s ability to succeed (Bandura, 1987). In this way, the students in this sustainability course witnessed the risks, progress and competency each other was achieving, and this built their feelings that they could achieve as well. When students had many ideas in one class, the teacher got out chart paper and began listing them all. The chart was filled with ideas that the students themselves came up with. One by one, the students started trying each idea. All students’ ideas were equally valued, not just those from students who are traditionally successful in school or who behave in certain ways. Students watched others and learned that they too could offer ideas and problem solve.

One girl hung back on the first day of Sustainability. It was clear from her body language that she was unsure if she was going to like it or not. She was quiet and reserved. The teacher invited her into the discussion and into the group several times. By the end of the first week, she was completely part of the group, participating, solving problems and feeling positive. Her comfort was likely impacted by several things: the open and encouraging nature of the teacher;
the lively and flexible learning environment; and especially how she watched other students in their social modeling.

**Social persuasion.** Social persuasion is the encouragement or discouragement from someone else that impacts a person’s feelings of self efficacy (Bandura, 1987). This encouragement took two forms in the sustainability program.

The teacher. The teacher normalized failures and the necessary result--problem solving to improve situations. She gave encouragement by believing completely that the students were capable of solving any problems that came up. She did not solve or even suggest how to fix problems, but posed questions back to the student. How could you solve this? What could you do?

One example of this was a student who was pouring chicken feed into a container. The girl picked up a giant bag of feed and the bottom blew out. Chicken feed poured all over the floor and into the girl’s boots. She got the teacher, who said, “What should we do about this?” The girl got a broom and said, “The chickens eat off the dirt, so they shouldn’t mind a little dirt from the floor.” The teacher agreed and said some words of encouragement. After it was all swept up, the teacher said, “Now what can we do to that bag?” The girl went and found a staple gun and repaired the bottom of the bag. The teacher said, “Look at you problem solving. You know, life is about problem solving.” The teacher constantly validated student ideas and provided encouragement based on effort, perseverance, creativity and motivation, not on achievement or hollow, empty praise. In this way, the teacher supported the growth of self-efficacy through her constant feedback and support to students.

The students. The students offered a type of social persuasion that the researcher heard throughout the many observations. Students would comment on each other’s contributions or
offer discouragement when needed. The researcher heard students saying, “Don’t chase the chickens! They don’t like that,” and “Hold her with her wings down, more gently,” and “Stay back from the nesting boxes, she’s laying. They get scared if you interrupt them!” These corrections come from the other students, usually, and not the teacher. These impact the students in their learning and social persuasion. Students learn to give and accept feedback. They learn from each other.

**Psychological responses.** A person’s emotional state, or feelings, can impact their feelings of self efficacy (Bandura, 1987). For example, someone’s mood, feelings of stress, or psychological state can directly impact his or her feelings of being able to be successful at something. Learning to regulate emotions is a key part of building a sense of self-efficacy.

Students in the sustainability program seemed to be experiencing a lower level of stress than in other academic contexts. These students were regularly seen laughing, engaging in the work, and needing very few reminders about behavior or being on task. This was very different from other academic courses where the teacher must give out frequent behavior reminders and consequences. The learning environment in the sustainability classroom, as discussed above, was a fun, relaxed and joyful climate. Students knew they wouldn’t face a standardized test in the class, they wouldn’t be asked to do something that they had no interest or control over, and they could take time for music, discussion, and simply being outside with animals. This setting promoted students feeling more relaxed, which made them more ready to solve problems and share ideas. This setting increased their ability to grow in their self-efficacy.

This section addressed how this program impacted students’ sense of self-efficacy. Next, the focus will be on the effects on student engagement from participation in this service learning program.
**Effects on engagement.** When considering student engagement, it has been noted that practitioners know it when they see it. This can be hard to define and an elusive, but impactful, part of education.

Table 6

*Effects on engagement*

<table>
<thead>
<tr>
<th>Students are engaged cognitively, emotionally and behaviorally.</th>
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<tbody>
<tr>
<td>Students feel school membership and do authentic work.</td>
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<tr>
<td>Students feel good about being involved in something that they feel will make the world a better place.</td>
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Students in the sustainability class were engaged. Each student was directly engaged with the *doing*, planning, problem solving, collecting data, and researching mentioned in both definitions above. The researcher rarely witnessed students that were not engaged cognitively, emotionally and behaviorally. Sometimes the students were playful or took a bit longer to come back inside, but they eventually did so without negative teacher talk or direction.

In addition, this program provided a feeling of community and purpose for all students. They felt part of a group, they felt supported, and they felt cared for and cared for others. In authentic work, everything they did in some way contributed to the improvement of the sustainability program, better living conditions for the chickens, and the whole school (such as eggs for the cafeteria, an all school cookbook, and a pond for all students to use).

Students at the middle level want to be engaged in their learning. They want relevant, authentic activities that make them feel part of something greater than themselves. The sustainability program provided this in spades. The teacher made the direct connection between the student’s work and the improvement of the school, sustainability program, and the wider
community. In addition, the democratic nature of the classroom provided opportunities for all students to be engaged. The work was based on their own interest and problem solving, so the students had free agency to improve the program and the many parts of caring for the chickens and the outdoor spaces. Just as one participant said, “But like this class you actually do stuff. Take care of the things that we-- this school does.”

**Gender roles.** Part of the goal of this research was to look into any differences or themes of the case based on gender. What follows is an exploration of the results from the lens of gender bias and roles.

*Females.* During the middle school years, female students can lose confidence and feelings of self efficacy, which can affect their social, emotional and cognitive growth. In this sustainability course, the roles and responsibilities for problem solving such as working with power tools, building a roof, and insulating the nesting boxes were represented by both genders. There was equal participation in all aspects of the program. One teacher noted,

I don’t see a huge difference in boys versus girls. Which you can in science classes or other classes. Um, I’ll see more behaviors, or disorganization with the boys, but with her classes, they are all just doing. They are all involved, they are all invested.

During observations, the girls were eager and lined up to use the power tools. In one instance, the girls were trying to fix a roosting bar. They had to try several times, finding the right bit and depth to place it. This may have been their first experience with power tools, and they were eager to use them. This building of skills and competency can disrupt biases that the students may hold about gender stereotypes. Experiences working in teams with both genders, with equal problem solving power and skill, provided an equal playing field for girls to gain experience in leading,
problem solving, and gaining skills in areas where they might not have as much experience as some of the boys.

*Males.* In middle school, boys can feel pressure to start to behave more like men. They can feel stereotyped against discussing and showing their feelings, showing caring, and being vulnerable. Boys in this program were welcomed on an equal playing field to participate without bias or judgment. One boy, who had trouble paying attention in class and often talked to his classmates, seemed tough and stereotypically boyish in his behavior. He learned to pick up the chickens and that was all he wanted to do. He would repeatedly pick up the chickens, speak to them softly, and hold them on his hip. He brought the chicken over to the researcher to pet. He demonstrated his caring side and this was what he needed from the course. He was free from judgment and could show that without a fear of bias or stereotyping.

These kinds of gender role free environments build students’ sense of self efficacy beyond their genders. Stereotypical gender norms and roles were not regularly seen during this research.

**Further Findings**

In addition to the exploration of this program as it impacts middle level learners, additional findings emerged from this research. These include findings as they relate specifically to the teacher in her role as the creator, teacher and facilitator of this science based service learning program.

Table 7

**Further Findings**

<table>
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<th>Teacher growth mindset and bravery</th>
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<td>Innovative teaching needs support and a community to sustain itself</td>
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**Teacher’s growth mindset and bravery.** The teacher noted that in creating this program, without any guiding curriculum or foundation, she is doing what she asks her students to do everyday. She explains:

So, on some level I feel like you’ve seen some of the shining star moments, but you have not seen when it really did not look good, and it didn’t work, because that is-- it’s not always great. That is a big part of service learning. It’s not always awesome. It can be awesome. But it’s not a guarantee. It takes a lot of practice and time and willingness to put yourself out there and fail, and then reflect and try to do better. Um, that’s hard, (laughs) as a teacher. Especially when you always want to be great. I feel like I should be great. I should know how to do this. And then it doesn’t work. And then you are like I suck. To not stay in that space of, you know, woe is me, and to be able to problem solve, and it’s really what I am asking of kids, is to do that, in their life, and in their class, and so I have to be able to model that. For myself. The kids don’t see any of that internally, but I am doing exactly what I am asking them to do. So, you know. It, I think it is working, on a certain level. But its never over. It’s never over. The willingness of this teacher to experiment, to reflect on what could have gone better and work to improve it, and put herself in the same position as her students creates an ever evolving and improving practice and program. This growth mindset and reflective practice on the part of the teacher is an essential part of the program. Realizing that not everything is going to go smoothly and that the teacher herself is constantly learning and growing is brave and shows a level of maturity and experience in teaching. This is not the work of a new teacher, or one that is not
comfortable with change, growth and failure. This has a direct impact on students, as well because they see their teacher modeling the same type of commitment and learning as they are experiencing.

Innovative teaching needs support and a community to sustain itself. The teacher of this program reported feelings of isolation in her role. She is the creator of this unique program. She had few colleagues that understand exactly what she is doing. She described the climate:

And so now that I am here, doing this, it's exciting. But it is also scary as hell because it is all me. Everything is riding on me and my ability to make it happen, or be creative, or problem solve. There’s no foundation for what this should look like and everyone has their two cents about what it should look like, so that’s hard to, you know, you get the people who don’t really know what you are doing, but then they come in and “Why are you doing this?” and “You should do this!” and you’re like okay (big sigh). So that part’s hard. And to always be like, we were talking about, am I essential? Having to prove that this is an essential piece to kids’ education. But it’s hard. It’s not easy. And I am alone. I was a team. I was a-- I had a community, I was validated, valued, and now I am just sort of like this thing, by myself. So that is hard.

Teachers need supportive communities to thrive and survive in this complex and changing career. In order for innovative programs like this to continue and become sustainable, a system of support is needed. The teacher described feelings of isolation in this role, even though it is a role she designed and wanted for herself. Within her school community, she needed to be understood and valued for the role that the program played. This can be challenging in school climates for various reasons and positionalities of various staff members. Add to that the stress of
wondering if the program will be funded year to year, and this can create a stressful climate for the teacher to innovate within.

**STEM and the greater good.** STEM, or Science, Technology, Engineering, and Mathematics has become a buzzword in education. STEM standards are now included in the Next Generation Science Standards that are being adopted across the country. Technology company CEOs have lamented the lack of employees from the U.S. that have the STEM skills needed for high tech jobs. There is a woeful lack of female engineers and an ongoing effort to increase STEM curriculum and courses in schools nationwide.

A surprising finding emerged in this research when the sustainability teacher reflected on STEM in relation of the sustainability program. When discussing if the program could be extended into high school, the teacher noted that if it didn’t have anything to do with STEM, the answer would be no, since that is the focus. She said:

It’s great we need engineers, but what are we getting at? Are we building more things we don’t necessarily have to have on this planet, or are we using it to solve critical world problems, that we need to address? These are two different things. Do we need to make more robots? I don’t know, I'd rather look at the bigger picture of our planet. That is the kind of STEM I would want to be involved in.

Here the teacher is feeling pressure from the new STEM standards, and seeing that her program might be impacted by the move towards more STEM in science content courses. The idea that STEM needs to connect to a greater good, an intrinsic motivation, is a new finding. The sustainability program has many aspects of STEM that the researcher observed: frequent mathematics, engineering practices, and energy concepts. The teacher pointed out that STEM programs without a clear intention of using STEM to solve some of the world’s most critical
problems are not as powerful. This concept could have a clear impact on STEM curricular development, planning and research.

**Summary of Research Results**

Numerous themes emerged that best described the experience of fifth grade students in a service learning based sustainability course. These were doing/engagement; building competency; problem solving; caring; connection; relaxed learning environment; independence; pride/feeling good; joy; school wide impacts; lack of behavior problems; integrated academic experiences; learning to follow through; and changing student perspectives on learning. The students experienced these themes frequently in the program, and described them throughout their reflective work, discussions, quotes, and actions. The researcher gained this information from direct observations and interviews, as well as analysis of written work, including student questionnaires, identity maps, and final reflective projects.

The research question stated how did students’ experience in a service learning class influence their self-efficacy and engagement? The findings shared that students' sense of self efficacy increased through the areas of mastery experiences, social modeling, social persuasion, and a relaxed learning environment. Students demonstrated this growth in their written work, in their interviews, and quotes gathered during observations. In addition, student engagement at all levels was noted: cognitive, emotional and behavioral. Expanding the definition of engagement to include school membership and authentic tasks also describes the experience of students in this program. Students in this program did not conform to gender role and expectations, but found themselves free to participate in possibly new and different ways in experiences.
In addition, further findings emerged from the research. These included the importance of the teacher’s growth mindset and bravery, support for innovative teaching and programs, and STEM connecting to the greater good.
Chapter V: Discussion of the Major Findings

Problem of Practice

Early adolescent students find themselves at the cusp of massive change. They face changes in their bodies, their cognitive skills, and in their social and family relationships. This comes at a time when they are developmentally ready for more independence, choice, and self-determination in their educations. At the same time, many early adolescents are transitioning to school settings that are departmentalized, with fewer personal connections, and more of a focus on traditional content-based learning. This may not be the best developmental fit for this age student (Eccles & Midgley, 1989). Research has indicated service learning may be a better match and provide students with an engaging course of study that grows their connections with their school and wider community (Association for Middle Level Education, 2015).

Research Question

The research question asked: How did students’ experience in a service learning class influence their personal development (self-efficacy and engagement)?

Summary of the Findings

The researcher completed a case study of fifth grade students new to a middle school sustainability program. This study found numerous themes to describe the student experience: doing/engagement; building competency; problem solving; caring; connection; relaxed learning environment; independence; pride; joy; school wide impacts; lack of behavior problems; integrated academic experiences, learning to follow through and changing perspectives on learning. In addition, students in this course experienced high levels of engagement and self-efficacy. Growth in self-efficacy was demonstrated from mastery experiences, social modeling, social persuasion, and a comfortable learning environment. Engagement was shown in the realms
of social, cognitive, and emotional engagement, which included feelings of school membership and engagement in authentic tasks. There was also a lack of stereotypical gender roles in place during this course. Further findings included a growth mindset on the part of the teacher; a need for a professional learning community; and a teacher’s view to emphasize the real-life applications of Science, Technology, Engineering, and Mathematics.

**Discussion of Key Findings**

The main thematic findings of this case study are shared in chapter four. Those findings, and overlapping themes, are discussed in this section and highlighted in Table 8.

Table 8

*Key Findings*

<table>
<thead>
<tr>
<th><strong>Middle grade students need choice.</strong></th>
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<td><strong>Middle grade students need to feel competency and gain skills with problem solving in a mistake friendly setting.</strong></td>
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<tr>
<td><strong>Middle grade students need to feel connected personally to teachers, students and authentic tasks for engagement to occur.</strong></td>
</tr>
<tr>
<td><strong>Middle grade students need to feel that they are making a difference and improving their schools and communities.</strong></td>
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**Middle grade students need choice.** Students in this study thrived in an environment where they had choices. One key aspect of the choice was the job sign up chart when students walked in. As a first act in the class each day, often even before the students took off their jackets, they engaged in choice: what job were they going to pick today? This was powerful and caused excitement and engagement right away. The teacher provided frequent opportunities for choice, whether it was which problem solving team to work on, which program area to focus on
improving, or what students would choose to chose to power in their reflective slide shows. Student choice was a theme prevalent in student interviews, observations, and written work.

In recent years, middle grade educators and researchers have noted the need to provide early adolescent students with opportunities for student voice and choice in their educations (Association for Middle Level Education, 2010). Choice and free agency have been linked to increased engagement (Denton, 2005). According to Eccles and Midgley, early adolescent students are developmentally ready for more free agency and independence in their educations, to match their cognitive, emotional, and physical development changes (1989). In this research, students thrived with continual choice in their program. The entire structure of the sustainability course is based on student choice, problem solving, and interest.

Having frequent choices provided an environment where students were constantly engaged and invested in their own decisions and outcomes. The motivation was not external, but internal, and intrinsic. Students did not perceive a “banking” method of education (Friere, 1970), where the teacher is the sole provider of information, with an all-knowing stance of authority. They were creating their own learning, constructing it from experience, the vision for education shared by Dewey, Friere, and Kohl. When provided with choice, students moved from a passive state of taking in knowledge, to creating it themselves through their own interests and experiences. This study adds to the body of research that supports constructivist educations, particularly at the middle level, when students are developmentally ready and engaged by this type of learning.

Middle grade students need to feel competency and gain skills with problem solving in a mistake friendly setting. Students in this study felt comfortable thinking creatively and trying out innovative ideas to solve problems and improve the conditions for the chickens and
other organisms. The teacher created an environment where it was safe for students to do this by reminding students that she didn’t have the answers, that the students were in charge of the ideas, and that she truly needed them for the program to work. When a student dropped a huge bag of chicken feed on the floor, the teacher encouraged the student by saying things happen like this all the time, we just fix it and move on, just like in life. Mistakes and problem solving were normal and important parts of the course and this was noted in the interviews, observations, and written reflections in this research.

Recent research has focused on the need for students to build a growth mindset (Dweck, 2006). Dweck defines a growth mindset, as occurring when “people believe that their most basic abilities can be developed through dedication and hard work—brains and talent are just the starting point. This view creates a love of learning and a resilience that is essential for great accomplishment (2016, para. 4).” Many adolescent students come to school with fixed perceptions of their abilities, particularly in the areas of reading and math. These patterns of fixed mindset thinking—that some people are “math people” and “reading people” inherently hurts students’ cognitive and emotional growth. Students need to experience failure regularly and see it as a learning opportunity (Lahey, 2015). Brain research indicates that students learn the most when making mistakes, because synapses fire more fully, building connections in the brain (Boaler, 2016). The brain growth happens in the struggle to learn and understand. Creating environments where it is safe to creatively problem solve, make mistakes, learn and adjust is not just in the realm of mathematical thinking.

This extends beyond any subject specific matter of curriculum or courses. This is development of a resilient, growth mindset. Students need experience trying to solve problems of their own perception, taking data and adjusting, making mistakes, and reflecting, to build
competency and self-efficacy. This experience can then apply to academic and social contexts. Students in this study noticed and appreciated the experience of solving problems and one even described the link between doing so and solving future problems.

Seeing the connection between learning to problem solve within the sustainability course and in real life gave students much needed problem solving skills and competence that they will need in their lifetimes, as they face problems in any context. Programs that foster authentic, interest based learning, concrete experiences and connections, with a mistake friendly environment, create learning environments for students to build competence, resilience, self-efficacy and true engagement. Students in the sustainability course did just that, every day. The lack of authoritative judgment, the support around making mistakes, the personal connections, all worked together to create a climate where students felt safe to test out their ideas, to make mistakes, to learn and reflect honestly. This built their experiences, sense of competency, and self-efficacy over time.

Middle grade students need to feel connected personally to teachers, students and authentic tasks for engagement to occur. Safe learning environments cannot be underestimated, especially for early adolescents who are extremely sensitive to criticism, labeling, stereotypes, and bullying (Goldring & Rosen, 2004; Gilbert & Irons, 2008). Students need to feel connected to the teacher, feel trust that he or she is a safe contact, and feel safe and comfortable to be himself or herself. They need to feel confident that their teacher is someone with whom they can honestly share their interests, their ideas, and their reflections. The Association for Middle Level Education explains how critical the student relationship is with the teacher,
Teachers must ‘win their students' hearts while getting inside their students' heads’ (Wolk, 2003, p. 14). As Haberman (1995) suggested, this winning of the hearts occurs through very personal interactions, one student at a time. This perspective is supported by research suggesting that teachers who develop such relationships experience fewer classroom behavior problems and better academic performance (Decker, Dona, & Christenson, 2007; Marzano, Marzano, & Pickering, 2003) (2016, para. 4).

The teacher in this study was an expert at making students feel connected, valuable, important, and unique. She connected with students personally at the beginning of each term, kept the negative teacher talk to a minimum, if at all, and constantly supported the students with humor and kindness. This was an essential element of the program. It made the students feel important and valued. All participants talked about enjoying the teacher. Students not in the sustainability course at the time came back to see her regularly. It was clear her bond with students was strong.

Students had to connect with one another as well. The small class size in this program allowed for students to continually form groups based on similar interests. Students were given the time and space to work through problems and handle social dynamics on their own. This might not have been so productive in larger classes. Students regularly worked in interest based groupings continually. These were not self-segregated by gender, as often happens in other classes or school lunch. Students worked with students of differing abilities, backgrounds, and social status. This connection, and focus on a shared goal, bound them together. The nature of experiential education, a shared journey toward solving a problem, led to feelings of belonging, safety and engagement in these students.

The tasks in this course were authentic. They were generated by an authentic need, either from the chickens, the worms, the school community, or other real life needs or issues. There
were no tasks that were completed “for the test” or “because I was told to.” Students connected to the program because they were empowered to solve problems and make a difference by improving the sustainability program, lessening the environmental impact of the school, building awareness, or improving the living conditions of the organisms under their care.

Connecting to teachers, other students and authentic tasks allowed these students to engage fully in their learning. These conditions could be replicated in any educational setting and in any content area. They are the groundwork from which constructivist learning can take place.

**Middle grade students need to feel that they are making a difference and improving their schools and communities.** Students in early adolescence are just starting to tap into issues of social justice, world affairs, and their impact on the world. They are often ready, in a grade appropriate manner, to learn about world history, current events, and historical and current injustices and inequalities. Many students feel passionate about issues already. They are craving the information they need to develop their own sense of identity. When students feel passionately connected to a subject or issue, it becomes part of them and extends well beyond academics and school hours.

During this research, the author witnessed students approaching the teacher well beyond class times to discuss issues of sustainability or the environment. During recess, students would stop by and offer ideas about how to improve the chicken coop or living conditions. Students would plan to eat lunch in the Sustainability room, stay after school, or even miss Physical Education class to continue to work on designing the roof of the chicken coop. Students would stop by class to point out something wasteful, comment on a documentary they’d seen, or share a change they had made. This went way beyond class time and was a regular occurrence. The walls between the sustainability class and the community did not exist, and that is exactly what
the principal commented he wanted to see more of, and what educators hope to do. The teacher and the principal noted that students at this age are ready to feel passionate and connected to their world. They need to feel they are an important part of a community and can make a difference. In short, the middle level student is ready to be empowered, and this opportunity is often missed in traditional middle level education settings.

The students reflected on what they did in the class and how it made them feel good. They noted that the work made them feel like they are doing something to improve the world. Environmentalism can feel defeatist, with all of the problems that face this new generation. The daily work of improving the school community, moving it more fully toward being sustainable, gave the students a feeling that they could make a difference, they could improve their own lives and their communities. Study participants noted feelings of empowerment, pride and satisfaction from their participation in the sustainability course. This is essential for the students to feel authentically engaged.

**Middle grade students need room for joy, fun, and spontaneity.** The world is a serious place and nowhere is this felt more acutely than in our schools. With increasing standardized tests, pressure to meet the Common Core standards, shifting curriculums, increased organized activity outside of school, and pressure from parents, students are often stressed and feeling overwhelmed. What is striking about this course was the relaxed, joyful and spontaneous nature of learning and being. Students in this study seemed to breath more deeply in the class. They relaxed, sang along to the music, and did their jobs independently with happiness and focus. This was in stark contrast to many middle school class settings where the students are seated, silent, passive, and negative.
The course was designed to cover specific sustainability concepts in each year. These were the only parameters of the course. This and a lack of formal, traditional assessments provided a free, integrated, and creative platform for learning. Students reflected on learned concepts and provided evidence of the application of the new concepts in their projects. These projects and reflections were assessments, but authentic, alternative, and student generated which led to greater revelations instead of teacher focused and limited only to learning the specific concepts. By freeing the students up to reflect on the learned concepts and beyond, keeping their focus open-ended, students often went beyond the teacher’s expectations and the concepts taught.

Also, the teacher did not stop students from joyful excursions from the focused task at hand. If a student needed to spend more time feeding or holding the chickens before attending to group or reflective work, she allowed for that. If a student wanted to sweep the whole sustainability room while singing to loud music, she allowed for that. If students came up with an idea and could concentrate on nothing but this idea, she let them explore it. This spontaneity and joy was palpable in the class.

The demands on early adolescent students are increasing. Providing environments where they can be children, be relaxed, joyful, and spontaneous provides a much needed counterpoint to the increasing demands and allows them to learn more deeply than more structured, authoritarian environments.

Service learning and hands on work has the potential to build engagement and self-efficacy in middle level learners. Research has indicated that high quality service learning programs increase student achievement and engagement, although the focus on middle level service learning is lacking (Billig, 2000). Service learning and experiential learning both share
similar qualities, focusing on experiences, reflecting on those experiences, and helping local communities. These aspects of service and experiential learning can be applied in most educational contexts across the country and have the potential to increase both engagement and feelings of self-efficacy.

In this research, fifth grade students participated in a program that shared many aspects of service learning, but was not a traditional service-learning program in its structure and format. Students became part of a community that was charged with increasing the sustainability of the school. This increased their sense of ownership and belonging. It did not start with groups deciding what community problem to solve based on wide-open interests, but through the lens of sustainability.

Teachers can feel overwhelmed by the prospect of developing a program like the one discussed here, but it doesn’t have to be that way. This is one example of an integrated, service based, hands on program, but others can be developed to meet needs of schools and communities. They can be as unique as the school communities where they are stationed.

The findings suggest that aspects of service learning can be used to create programs in various settings to increase student engagement and self-efficacy. As long as students have the opportunity for repeated problem solving, in a growth mindset classroom, with room for joy and choice, at a relaxed pace, students will have the potential to ignite their engagement and self-efficacy in deeper ways. Engagement was noted at all levels (cognitive, social, emotional) with the participants in the study. This engagement has the potential to carry over from the middle school into the high school, where it becomes critical for academic success. Programs like this one have the potential to ignite a passion and an engagement where it did not exist before, and this could carry over to the high school, and beyond.
This research has many applications for middle level learning environments, which will be discussed more fully in the recommendations section.

Findings in relation to theoretical framework

Experiential Learning Theory. This theory was rooted in the constructivist philosophies of Dewey and Vygotsky, and based on stages of learning developed by Kohl (1984). He outlined phases of experiential learning, which include concrete experience (doing/experience), reflective observation (reviewing/reflecting), abstract conceptualization (concluding/learning) and active experimentation (planning/trying out what you have learned). This section will explore the research findings with these phases as a frame.

Concrete experience (doing/experience). The sustainability course was completely experiential with very few parts where the students are not actively “doing.” The researcher witnessed students participating in concrete experiences during each class, ranging from everyday chicken coop jobs, to putting the pond to bed for the winter, to building an insulated roof for the coop. Each class had doing at its core.

This was a clear shift away from the teacher in the all-knowing stance (Freire, 1970), to authentic opportunities to learning from experience. The teacher was constantly in the role of facilitator, asking questions for reflection and providing support. One key element of service learning is that the students determine the experience themselves (KIDS, 2013). They discover the problem or issue, and make a plan of action. In the sustainability course, students had certain themes or areas to work in and had to devise their own plans to solve problems that would improve the living conditions for the chickens, the school community, or some other aspect of the grounds and sustainable living.
This *doing* phase was critical for student engagement. All students were engaged during the researcher’s observations, and the findings discuss how students enjoyed and felt empowered by this phase of the experiential learning experience. They crave *doing* in their educations. This phase took up the majority of time in the course, and based on interviews and observations, this kind of learning was rare in the students’ regular education courses.

**Reflective observation (reviewing/reflecting).** At the beginning or end of many classes, the teacher set the chairs in a half circle. The students gathered around a small white board in their seats after completing their daily jobs. This was when the teacher guided the students with questions and a focus for the day’s problem solving. Students brainstormed what was working well and what needed to be improved. Students took the time to reflect about the day before, when the teacher asked questions such as “What did we do well?” “What can we improve on?” and “How can this inform our next decisions?” Sometimes, this was done in writing, and shared with the group. Other times, it was done verbally. Each student was asked to reflect and share. This was a powerful reflection time where students talked about their experiences and learned from them. Students also supplied social persuasion for good choices in these settings, giving feedback to other students in constructive ways about how to improve the *doing* phase of the course.

Billig stated that there needs to be many opportunities for reflection in order for service learning to have an impact on student learning and personal growth (2000). Kolb believed that students move through each of the phases for growth as well as part of his model for experiential learning (1984). The Sustainability course provided many opportunities for this reflection, culminating in a slide show created by the students. The slide show had few requirements but to offer a definition of sustainability, to show what the student had done and how they had problem
solved, and then to share what they were most proud of and why. The answers were reflective and transformative. The students were proud of their contributions to the school community and playing a role in moving society to becoming more sustainable. Reflection in this course played a key role in providing students with an opportunity to learn from their experience, model reflective learning, and make improvements in the future.

*Abstract conceptualization (concluding/learning) and active experimentation (planning/trying out what you have learned).* Abstract conceptualization and active experimentation took place in many forms, in an iterative nature, constantly during the course. Sometimes, it was in the reflection circle where students applied new knowledge to future plans. For example, students wanted to learn which nesting box was most productive and comfortable for the chickens. A group of students devised a way to measure this. They designed each nesting box in different ways with the lighting, the heating pad, and the insulation. The students then took data and sat down together to review it. They discovered that the nesting box closest to the light was the most productive (yielded the most eggs), and decided that the chickens needed more heat in the coop. They made conclusions based on their own data and observations. Another example was when the classes were testing different insulation designs for the roof. The kids took data and analyzed it as a group. They used the data to inform their decisions about the best design. The students were constantly problem solving, reflecting, and applying new knowledge to their decisions. This cycle was not linear, but iterative and flowing between phases.

Experiential learning theory provided a framework from which to view the activities in the sustainability course. While students cycled through these phases of *doing*, learning, and experimenting, it was clear that their learning paths were not linear. The students cycled between
the phases constantly during the course, learning, applying their knowledge, testing it out, and learning more. They skipped steps, circled back to others, and sometimes stayed in one phase for a while. This seems a more natural view of the experiential learning theory, not as a linear cycle, as pictured by Kolb (1984), but as more of a cyclical web, as pictured below.

![The Experiential Learning Cycle](attachment:image.png)

*Figure 2. The Experiential Learning Cycle (Frank LaBanca, 2008).*

**Findings in Relation to Literature Review**

This section will explore connections between current literature on adolescent learning, personal development, and service learning. Linking back to the literature review, this section will highlight the research in terms of its connections to literature reviewed in chapter 2.

**Stage fit.** The literature referred to the seminal work of Eccles, Midgley, Wigfield, Buchanan, Reuman, Flanagan, & Iver (1993) on the concept of stage fit, education and early adolescence. Essentially, they argue that the current configuration, specialization and segmentation of the learning environment for middle level learners is not meeting their unique
developmental needs. Middle school aged students have unique developmental needs: for autonomy, free agency, community, connection, and a sense of authentic purpose.

The findings of this research suggest that service learning courses, such as the sustainability course in this case study, may be a good developmental stage fit for the middle level learner. The students demonstrated authentic engagement, problem solving skills, free agency, and differentiation each day in this course. While students developed teamwork skills, sustainability knowledge, and hard skills such as building, using power tools, and working with roofing materials, they grew their own sense of self-efficacy. Middle level students want to learn in active settings, with peer interactions, and through connections to the community (Payne, 2005). Students looked forward to the course and were engaged throughout all of the observations. The findings connect back to stage fit research done by Eccles because while in a middle school, the developmentally based education appropriate for middle school students could be provided, as it was in this course. Advocates for stage fit based education could use this course as a potential model.

**Importance of ninth grade and staying in school.** Ninth grade is a critical year. Success in this grade often means that a student will graduate from high school. Thus, feelings of success, engagement and self-efficacy must be secure in order for a student to experience success in the all important ninth grade year. Middle school is often the last best chance to engage students at this level. If students do not achieve academic success during the sixth grade, research shows they have poor attendance and have a 10-20 % less chance of graduating high school on time (Payne, & Edwards, 2010). Students also report uninteresting classes that do not connect to the real world as a reason for dropping out (Farber, 2010).
For this reason it is critically important to design curriculum that matches their developmental stage and engages them in authentic learning experiences where they can experience success. The students in the sustainability course had at least one place where their developmental needs were being met and gave them a better chance at entering ninth grade with high levels of engagement and self-efficacy.

**Personal Growth in the Middle Level**

Personal growth in terms of this study focuses on the concepts of student engagement and self-efficacy. Personal growth has other aspects that are also covered in this section and overlap in the literature review as well.

**Self-efficacy.** Bandura wrote about self-efficacy and what contributes to its growth. His findings include mastery experiences, social modeling, social persuasion, and emotional state as key aspects of growth in self-efficacy.

**Mastery experiences.** Gaining mastery of challenges is critical to the development of self-efficacy in students. Bandura explains the connection, “Persistence in activities that are subjectively threatening but in fact relatively safe produces, through experiences of mastery, further enhancement of self-efficacy and corresponding reductions in defensive behavior (1977, p. 191).” This, in essence, was exactly what happened in the sustainability course each day. Students at this level crave a risk, a chance to do something they have not done before. Problem solving in authentic situations, but relatively safe in terms of failure, provided an opportunity for what Bandura calls mastery experiences.

**Social modeling.** Observing people that are similar to oneself succeed increases the feelings that one can master a similar activity (Moesgaard-Kjeldsen, 2013). As stated in chapter
four, students witnessed problem solving and success in social modeling in the course. This exposure increased the students’ feelings that they could succeed themselves.

**Social persuasion.** Social persuasion is the encouragement or discouragement from someone else having an impact on a person’s feelings of self-efficacy (Bandura, 1977). Bandura believed that encouragement could increase a person’s confidence and help to overcome feelings of self-doubt. The teacher’s steady encouragement provided social persuasion in this course, as did the social nature of the teamwork. Students were encouraged by other students for positive behaviors and problem solving. The peer social persuasion is likely even more powerful than the teacher’s at the stage of the early adolescent.

**Emotional state.** A person’s emotional state impacts their feelings of self-efficacy (Moesgaard-Kjeldsen, 2013). This concept linked back to the concept of personal connection, joy, and sense of belonging that was fostered in this class deliberately by the teacher. The teacher was a custodian of each student’s emotional state, and that led to increased efficacy and engagement from her students.

**Entitlement.** Hardward and Hoffman (2007) focused on entitlement in their study of service learning. Entitlement was defined in this study in terms of increasing personal responsibility and self-determination that led to the betterment of society. Their research focused on the change of perception of college students after participating in a service learning project and found that they moved from blaming and feeling that things should be done for you, to being responsible for one’s own actions. With concepts like “affluenza” in the news, essentially having a condition of privilege and entitlement as an excuse for criminal behavior, focusing on lessening entitlement is a worthy cause in education (PBS, 2016).
Students in the sustainability course accepted responsibility very quickly during the first class. They knew that the future of the program and the health and welfare of the chickens depended on them. This may seem like a small challenge, but it was not. In prior generations, early adolescents are not asked to do much. In other times, they had to farm, do many chores, care for younger siblings, and help run businesses. Many students in the 21st century do not have these levels of responsibilities.

The students in this course had to take responsibility for the success of the sustainability program and the creatures that counted on them and this was clear in multiple observations. Linking back to this research on entitlement, this contributed to their feelings of increasing personal responsibility and self-determination.

**Happiness.** Forrest, Bevans, Riley, Crespo, and Louis (2013) found that middle school students who reported they were content with their lives were more likely to engage in their academic career despite their race, gender, socio-economic status, grade point average, and family status. Happiness is challenging to study, but another researcher, Fredrickson, found that students with higher life satisfaction are more successful in school (2001). While difficult to measure in this study, the researcher did observe connections between joy, a relaxed atmosphere, spontaneity and a supportive, productive learning environment. The students in the sustainability course were observed as genuinely happy, involved, appreciated and connected. This was relatively simple to observe because of the lower class sizes of about 10 students. Where students do not report happiness and belonging at home, classes such as this one become even more important. If students have an opportunity to find happiness and joy in this class, it may impact their academic and emotional development in other areas.
Positive relationships. Carlisle found that students who participate in service learning experience more positive relationships between teachers, students and school staff (2011). This, Carlisle points out, leads to the lessening of bullying and office referrals for negative student behavior. In the sustainability course, students who were known as “behavior problems” were not singled out in any way. They were not put in time outs or break areas. The teacher gave redirection as needed, but these students were hard to identify because they were so engaged, involved, invested, and active. One teacher in the school described the sustainability teacher, saying that she just doesn’t have those kinds of problems (with behavior). Students are too invested to act out. This experience with positive relationships and not feeling labeled as a “behavior problem” could help these students redefine themselves and move beyond traditional labels of what a successful student looks like. In other words, having a class where a traditionally unsuccessful student feels success, valued and importance, could have impacts far beyond the class itself.

Engagement. The literature review shared a wide perspective of many aspects of engagement. These vary from Maslow’s hierarchy of needs, where students’ emotional needs must be met before other needs, to definitions of engagement on cognitive, emotional and behavior levels.

Maslow. In the sustainability course, and in all classes, students come with varying degrees of readiness for learning. Maslow recognized that student’s emotional, safety, security and health needs must be met before any learning can take place (1954). The teacher in this program allowed for emotional learning to take place. One boy was focused almost entirely on holding chickens in the course. He would gently pick up a chicken, speak softly to it, and then place it gently down. This student did this at the beginning of every class before focusing on his
jobs or group work. The teacher allowed for this emotional connection and learning because she said that it was obvious he needed it for whatever reason. Who knows what triggered this need? Something at home? A lack of connection somewhere in his life? The principal also noticed this with another boy. He was chronically in trouble at the office, but in Sustainability he was gentle and kind with the animals. He demonstrated his capacity for kindness in this context and was able to grow it.

**Cognitive engagement.** Cognitive engagement focuses on the achievement linked academic goals and participation within classrooms (Murray, Mitchell, Gale, Edwards, & Zyngier, 2004; Smith, L. Butler-Kisber, L. LaRoque, J. Portelli, C. Shields, C. & Sparkes, 2001). In the sustainability course, students were able to participate cognitively at different levels. Some students were measuring, figuring out the area, and involved in applied academics. Others were involved in constructing the roof, and others were in charge of designing it. Students self selected their level of cognitive involvement and were continually supported and pushed by the teacher to grow, test, and learn. This self-differentiation allowed students from different learning profiles to feel success, to be challenged at their level, and to feel like an important part of the group.

**Emotional engagement.** Emotional engagement involves the feeling aspects of learning, discussion, and self-perception. Students were emotionally connected to their work in the sustainability course. They regularly discussed, debated, and communicated their ideas, feelings, and concerns about the program. Evidence of this includes the outrage and dismay experienced by one class when the other failed to notice the chickens had destroyed some insulation, littering the chicken coop with tiny bits of Styrofoam. The students worked immediately to clean this up and worried about the health of the chickens after being exposed to Styrofoam in their food.
They were connected emotionally to the outcomes of the program and demonstrated emotional engagement in each class.

**Behavioral engagement.** Researchers define behavioral engagement as positive classroom behaviors that support learning. These were clearly evident as mentioned in chapter four and above. Students consistently showed positive classroom behaviors that supported learning. Occasionally the teacher had to encourage students to talk one at a time, or to refocus, but redirection and consequences did not go beyond that. Students were behaviorally engaged much of the time in each class.

The researcher witnessed these three aspects of engagement during all of the observations and linked back to increases in engagement as a result of participating in this program. Billig (2000) and Newmann (1992) additionally point to school membership, authentic work, sense of ownership, connection to real life, and fun as key aspects of engagement and service learning work. Students in this program demonstrated engagement in this light as well, as demonstrated in this section and in chapter 4.

**Bias**

Disrupting bias is a key element of service learning. Researchers have found that service learning can disrupt bias by providing an experience with a population that has been stereotyped, undervalued, or labeled in a negative way. This was found in terms of age (Fair, Davis, & Fischer, 2011) and race (Conner, 2010). Service learning can then be seen as a tool to reduce bias.

In terms of this research, bias was not witnessed. There was no separation between tasks based on gender, race, or any other protected class or group. The researcher did notice that the girls were very interested in using power tools, in building the roof, and all other elements of
physical work, as mentioned in chapter four. They were encouraged to participate in these tasks with equal support from the teacher. Gender differences were not a focus at all in the course. This had an equalizing effect. The researcher wondered what the rest of the day was like for students, whether they felt differently in other subjects, in the hallway and lunch about their gender or race.

One bias that could be disrupted by this course work could be gender bias on the part of each gender. Boys were gentle and kind caretakers of the chickens. Girls were measuring materials, cutting wood and plastic, and using the power tools. If students came into the course with stereotypes of what is girls’ work and boys’ work, this could have been disrupted. This is an unexpected benefit of this type of program, but links back to previous research linking the benefits of service learning more highly to sixth grade females (Scales, Blyth, Berkas, & Kielsmeier, 2000).

**Curriculum integration**

Service learning can be integrated across academic subjects. To achieve the most benefits, however, it must have certain components. These are outlined below as they pertain to this research.

**High quality service learning.** Billig (2011) described the components of a high quality service learning program to include a long duration and intensity, meaningful service, curriculum and learning links, reflection and diversity. Below is a chart with these indicators of quality and an added column reflecting the research of this study.

Table 9

*Standards and Indicators of Quality and the Sustainability Course (Billig, 2011)*

<table>
<thead>
<tr>
<th>Standard</th>
<th>Indicators of Quality</th>
<th>Sustainability Program</th>
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<tr>
<th>Duration and Intensity</th>
<th>Service learning projects have a long enough duration to participate in all the components, and to meet community needs and project goals—usually several weeks or months.</th>
<th>5-week intensive sessions. Could be longer: students, the teacher and the principal all wished it were.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meaningful Service</td>
<td>Projects are age-appropriate and personally relevant. Process leads to attainable goals and increased understanding of societal issues.</td>
<td>The sustainability progression of responsibilities and concepts reflected the students’ developmental level and skills. The tasks were age appropriate and relevant and lead to increased understanding of sustainability issues.</td>
</tr>
<tr>
<td>Links directly to curriculum and learning content</td>
<td>Projects have clearly articulated goals, are aligned with the curriculum, connect to other learning, and are supported by school boards.</td>
<td>The projects were linked to concepts and goals outlined in the progression. They connected to all other academic subjects and the program was fully supported by the principal and school board, who approved its creation 4 years ago.</td>
</tr>
<tr>
<td>Reflection</td>
<td>Service learning experience has regular reflection opportunities that promote in-depth thinking about society, self, and service.</td>
<td>Reflection was embedded throughout the course. It occurred at the beginning and end of each class, sometimes verbal and sometimes in writing. Students also created a</td>
</tr>
<tr>
<td>Diversity</td>
<td>Helps students develop multiple perspectives, conflict resolution skills, the ability to overcome stereotypes, and to understand diverse backgrounds.</td>
<td>Students were constantly working together, developing their teamwork skills and unlearning any biases about each other, school, and sustainability issues.</td>
</tr>
</tbody>
</table>

By this analysis, the sustainability program would qualify as a high quality program as identified by Billig in 2011. While the duration could be longer, and the integration with other subjects fleshed out more fully, the fact that this robust and innovative program is taking place in a public school is a big success. Within the confines of the schedule dictated to the teacher, this learning progression is a high quality program that meets the requirements for a service learning program that provides many academic, social, and emotional benefits to students.

**Collaboration with school staff**

Collaboration has been a buzz word in teacher education for years. Professional learning communities are common, where teachers meet to improve instruction, learn from each other, and develop curriculum. Collaboration in terms of service learning has been beneficial, with Stott and Jackson (2005) finding that service learning led by school counselors and teachers offered student growth in several areas, including personal awareness, social skills, learning skills, career interests and character education.

In this research, there was little collaboration with school staff observed. The teacher shared that she felt isolated in her practice. She was not considered a science teacher, so she did not serve on the science committee and had to ask the science teachers about their committee
work. She was on the allied arts teaching team, with technology, art, band, French, and PE/Health. These content areas do not apply directly to her teaching. Because her classes were very small, there was no support staff in her room to help students. One paraprofessional came to the class because he was interested in sustainability education. He was very helpful and supportive with the students.

The teacher craved a team teacher or a professional learning community. She did all of her community outreach, problem solving, fundraising, and planning on her own. The teacher was eager to discuss service learning, sustainability concepts, student growth, and curriculum and collaborate with the researcher. It is essential that the sustainability program itself becomes sustainable by providing a professional learning community for the teacher. This could be online or regionally face to face. To fully integrate, expand the reach of the program, and to support the teacher, this would be a logical next step in creating a program that is sustainable beyond the single teacher running it.

This research provided a study that fills some of the gap left by a lack of research about service learning at the middle school level. Current literature supports the findings of this research, that high quality service learning for early adolescent students can be a stage fit for their development; has links to increased happiness; increases engagement; and has the potential to combat bias and entitlement.

Limitations

Sample size. The sample size of students in this study was a limitation. While a small sample size is common in qualitative studies, it still has an impact on the generalizability of the findings. In this study, 21 fifth grade students participated. In case study research, however, the unique case is described fully and the experiences of the participants is shared. The research is
more about understanding how participants experienced the case, sharing their stories, and learning from their voices, versus a generalizable set of data. A smaller sample size allowed the researcher to triangulate information, gather written data, make regular observations, and complete qualitative interviews with each participant. In follow up studies, a wider participant pool could be used for a mixed method study in early adolescents, service learning, and personal growth.

**Participants.** As noted before, the participants were fifth grade students in a rural middle school.

**Race.** The participants in this study were largely Caucasian with the exception of one student. This limitation was based on the population of the school, where 98.3% of the students are Caucasian. This limitation affected the research. It doesn’t give voice to minority students involved in service learning projects as they transition to middle school. For further exploration, repeating this study in a school with a majority of minority students would be a good next step in looking at the possible relationship between early adolescent students, personal growth and service learning.

**Poverty.** The participants in this study represented the students of the school. They were selected because they were fifth grade students, and they turned in their parent permission form. There was no analysis of whether the students were receiving free or reduced lunch based on their parents’ income levels. In the school, 26.6% of the students received free or reduced lunch, indicating that they are at or near the income level considered food insecure or living close to the poverty line. The statewide level of this marker was roughly 33% of the population. The school, then, has a higher rate of parental income than others in the state. This was a limitation because the results are considered in the economic context of this community and its children. A future
study of early adolescent students, personal growth and service learning focused on a school with over 50% of the population on free and reduced lunch would provide more depth and understanding of how poverty, family economics, and schools might play a role in researching this topic.

**Gender.** Both genders were represented in this study, with 9 boys and 11 girls who were part of the study. This matches roughly the school and state gender distribution. One limitation to this study was that it was focused on both genders, not exclusively on females. With the data about sixth grade females showing more benefits of service learning, a possible future study could focus on the benefits to female middle level students specifically, to see if these benefits are indeed more significant for these students. Through a feminist theory lens, future research could look at how service learning might empower girls to consider their futures more broadly and be less defined by stereotypical gender roles or limitations.

**Teacher positionality.** The researcher in this study is a current teacher and practitioner of service learning. This could affect the study results and be a limitation, because of perceived bias toward positive results.

While the positionality of the teacher is undeniable, the thick descriptions, the triangulation of data gathering, and the fact checking done at every level of this research do not allow this potential bias to flourish in this study. The researcher was constantly asking questions, assuming as little as possible, and let the study participants’ voices speak for themselves. Students spoke freely in semi-structured interviews. Students were not guided or prompted in any direction by the researcher. There was also a witness, a retired teacher, who sat in on each interview. Participants were able to come back to any question, to skip any, or to add more
information at any time. The researcher used best practices for qualitative interviews with students.

The teacher also spoke freely with the researcher on a regular basis, allowing for a more in-depth view of the case and the participants. This access allowed for frequent fact checking and discussions that added to the body of this research.

**Recommendations**

After completing this research, several key recommendations for future practice emerged from the data. These recommendations were based on the policy, structure and curriculum of middle schools.

Table 10

*Recommendations*

<table>
<thead>
<tr>
<th>Recommendation</th>
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<tbody>
<tr>
<td>A sustainability or service learning program in every middle school or school that teaches students grades 5-8.</td>
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<tr>
<td>Consider K-8 configurations for more service opportunities and stage fit.</td>
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<tr>
<td>Integrate service learning in existing programs.</td>
</tr>
<tr>
<td>When starting new and innovative programs, provide a system for supporting the teacher and the program.</td>
</tr>
<tr>
<td>Cultivate growth mindset on the part of all teachers and students.</td>
</tr>
<tr>
<td>Create authentic learning experiences, projects and activities for middle school students that connect them to the wider world.</td>
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</table>

**A sustainability or service learning program in every middle school or school that teaches students grades 5-8.** The benefits of service learning are well documented (Billig, 2000). This pedagogy is a beneficial educational tool for all grade levels, but specifically for
early adolescent students. The developmental fit of service learning with middle level learners is strong and the benefits to engagement and self-efficacy could have life long effects for these students. It is recommended that all middle level students have access to a service learning program, be it in sustainability, or more focused on another content area or school wide leadership. Every school would need a teacher, or several, to lead and coordinate this work. School boards could review the data on student engagement and achievement, including the decreases in dropping out of school and the personal growth in middle level learners that participate in these programs. They could phase out dated programs such as home economics or enhance their offerings to include a local service program. Local communities and schools together could shape this collaborative effort so it would have reciprocal benefits for all. Or, if the school is developing STEM programs, an intentional tie in to sustainability and service toward the greater good could be created to broaden this work.

A sustainability program in every school would have a dramatic effect in creating global citizens that are empowered and motivated to make choices that improve the world. With the mounting problem of climate change, our society needs students that can problem solve, make choices that promote sustainability, and become an informed electorate. Students who have participated in a service learning progression like the one in this study will have an environmental literacy that can be applied to the rest of their lives. This impact could be far and wide, especially if a sustainability program were part of the Common Core, the New Generation Science Standards, or other national and state standards.

**Consider K-8 configurations for more service opportunities and stage fit.** Students at grades five and six are often leaving the strong personal connections made at their elementary school. They face social and academic challenges as they move to new schools with more
segmented coursework, fewer personal connections with adults, less parental communication, and decreased engagement. Configuring schools to be K-8 nationwide would provide schools with a chance to develop a service learning progression in grades 5-8 in a tighter community and with fewer transitions. Students could develop their leadership, problem solving, and collaboration skills by working in the school with younger students to help mentor and lead in a variety of roles. By turning middle level learners toward the younger grades as mentors, they will become school leaders and role models, and help the school community thrive. Why should we separate and segment the education of middle level learners when they crave authentic learning, experiences, leadership, free agency and autonomy? Providing K-8 schools would allow each school to develop a unique program that meets this level students’ developmental needs while improving the local school and community.

**Integrate service learning in existing programs.** Schools are facing increasing budget problems, cuts in programs, and increasing class sizes. Starting a new program in this environment is difficult in many areas. Teachers have an opportunity to integrate service learning programs into existing curricular courses. Any subject can feature a service learning program and still meet its content standards (Farber, 2010). It takes careful planning, attention, collaboration, and support from administrators.

Especially in schools where engagement is lagging, and there are concerns about school graduation rates, a service learning program could be a response to those problems and focus specifically on a school community need. Or if there are problems with bias, bullying or stereotyping, service learning programs could be tailored to meet the need of disrupting bias and teaching tolerance and equality. A team of teachers could be deployed to determine the need of
the middle level learners and co-create a responsive program with students that helps fulfill a community need.

**When starting new and innovative programs, provide a system for supporting the teacher and the program.** This study highlighted a finding about feelings of isolation on the part of the teacher and a lack of a professional learning community with colleagues in a similar role. Administrators can provide teachers with connections and communities, whether online or in person, that can better support teachers as they try new and different programs, roles, and approaches. This is the only way to sustain change, to support those who are leading it.

Where professional communities do not exist, efforts to create them are well worth it. Connecting teachers who are developing innovative programs could fight feelings of isolation and provide a sounding board for ideas, problem solving, and support. In this case, help from a sustainability non-profit organization or an online community of sustainability educators would help support this teacher in her innovative work.

**Cultivate growth mindset on the part of all teachers and students.** Students and teachers need to know that they are supported in their attempts to learn, grow, make mistakes, reflect and move on. Learning environments should be created with this goal in mind. Learning is a constant journey full of fits and starts, successes and failures. An environment where everyone feels safe doing that, openly and together will foster more innovation, learning, collaboration and success.

In education today, high stakes testing can diminish growth mindset on the part of both teachers and students. Teachers today feel pressure to succeed—and have their students succeed on standardized tests. This can limit the teachers’ ability to test out new ideas, to experiment with new approaches, and to fully embrace the growth mindset. If schools are to truly ask students to
have growth mindsets, they must allow teachers to demonstrate that as well. Administrators and policy makers can support teachers in their efforts to reflect, learn and grow, instead of limiting this with evaluations that focus on one set of data without looking at the whole picture, including the teacher student relationships, the learning environment, and the ability to be reflective and improve practice.

**Create authentic learning experiences, projects and activities for middle school students that connect them to the wider world.** For students to feel that their work is important and matters, it needs to be relevant in real world contexts. Students need to be able to know why they are doing something—not just for a test or because the teacher told them to do it. Students need to know the authentic purpose of the work, otherwise it will lack meaning.

In terms of STEM curriculum, an opportunity exists to connect these concepts with those in sustainability. By including an aspect of STEM curriculum that intentionally links back to creating something for the greater good, more participation, passion and engagement from teachers and students will likely happen. It is recommended that schools consider adding a component to their STEM work that asks, “So what?” How will this project, idea or activity make the world a better place, or improve a social condition, or solve a world problem? By doing so, schools can connect the popular concepts of STEM and sustainability together to create meaningful learning experiences for students that prepare them for solving the many significant societal problems that they will face as adults.

**Conclusions**

Middle level students are entering a complex social world, while their bodies and minds are undergoing rapid development. Our current model of education, where children transition from elementary school to a traditional middle school at grades five and six, can impact students
academically and socially in negative ways. Students at the middle level crave active learning, choice, independence, and authentic learning experiences in real world contexts. Service learning at the middle level has the potential to both meet their developmental needs and provide support in their development of self efficacy and cognitive, emotional, and behavior engagement.

Creating these opportunities for students is possible in various educational contexts. The priority for planning for the education of middle level students should be meeting their developmental needs and preparing them to become competent problem solvers who are life long learners and are engaged in civic life.

This research provides a window into how one school is making that happen. Despite the challenges that persist in public education, the decisions made by administrators, teachers, policy maker and communities can have a dramatic effect on the personal development and success of middle grade students. Traditional, segmented learning in content areas may not be the best fit for middle level students. As our culture evolves, so must its educational systems if we are to meet the needs of 21st century problem solvers who can tackle the world’s most vexing problems and learn to live sustainably.
Further Study

This section outlines the need for further study relating to service learning and middle level students. There are many opportunities to expand what works in terms of educating early adolescent students.

Middle Level Service Learning

While this study adds to the limited research on middle level service learning, more research is needed to explore the impacts of this pedagogy.

Female students. Particularly needed is more research in the area of the impact of service learning on girls. Girls face many challenges in adolescence and research has indicated that the positive effects of service learning are strongest for middle level female students. This begs more exploration and study.

Diverse communities. This research took place in a community that lacked diversity. Middle level service learning needs to be studied in a diverse community for a broader understanding of its impacts on all middle level learners.

Lower income communities. In the community featured here, the parent income was higher than the state average. This research should be replicated in a lower income community to understand how service learning impacts students in these settings.

Service learning K-12 (Kindergarten through Twelfth Grade)

While this study focused on service learning at the middle level, service learning has benefits for all students K-12. Researching K-12 continuums in schools in terms of engagement, self-efficacy, and academic achievement would be beneficial for schools looking to plan a rigorous service learning program for students throughout their academic experience. The benefits of service learning are well documented. Studying how service learning impacts learners
over the course of several years of schooling would add to this body of research and help educational leaders see the benefits at each grade level.
Final reflections

Programs like the one I studied here are the exceptions. Why is that? As I reflect on this experience I am left wondering how it is possible to make innovative, hands-on programs that excite students the norm in education today. Teachers and school systems face incredible pressures on their time and limited resources. With standardized testing, the Common Core standards, and district initiatives, it can feel overwhelming for teachers and schools to implement service learning into their curriculum. I have written about how to do this within specific content areas, and while meeting standards and goals, in my book Change the World with Service Learning: how to create, lead and assess service learning projects (Farber, 2010). With support and guidance, it is possible in every educational context, not just those with the space and land for chicken coops and gardens.

I encourage school leaders and policy makers to look beyond quantitative data. It doesn’t tell the whole story of a learner or the learning process. While this data is important, we must remember the human stories, the passion, the connections, the spark of learning, and not get lost in a sea of mandates, testing data, and increasing academic expectations. Early adolescents are complex, developing learners who need enthusiasm, experience, kindness and humanity.

If we are to truly transition schools into places where students are prepared to face complex, 21st century challenges, students need practice and experience. We must support schools and teachers as they develop innovative programs that create a spark in learners and connect them to their potentials and the wider world.


Association for Middle School Education. (2010). This we believe: 16 characteristics of successful schools. Retrieved from http://www.amle.org/AboutAMLE/ThisWeBelieve.aspx#122516-the-16-characteristics.


Carlisle, M. (2011). Healthy relationships and building developmental assets


Farber, K. (2010). *Change the world with service learning: How to organize, lead and assess service learning projects*. Landham, MD: R & L Education.


Hughes, C. (2014). Service learning 'commands respect and


pubertal change and school context. Hawthorne, NY: Aldine de Gruyter.


Appendix A

Initial Student Participant Recruitment Letter

Dear Grade Six Student:

I would like to invite you to take part in my Northeastern University Doctoral study entitled: Service Learning, Early Adolescents, and Personal Growth. As part of my dissertation research, I am conducting a study about service learning. I would like to conduct interviews with students and I think you could offer valuable information for this research. For your participation in this activity, I will need to have your consent, as well as your parent/guardian’s approval. Your participation is completely voluntary and you can decide not to participate without any repercussions.

Once I complete my proposal of this study and receive approval from Northeastern University, I will formally request your participation and your parent/guardian approval. At this time, I am simply looking for an initial interest response from students. Please be aware that agreeing or not agreeing to participate in this study will have no reflection on your rights, benefits, or services that you would otherwise have as a student. Also, any participation in the study will be completely confidential; names and other personal information will not be used.

If you have any questions about the study, you or your parent can contact me by phone at 802-223-5429 extension 316 or via e-mail to farber.k@husky.neu.edu. Thank you in advance for your time.

With gratitude,

Katy Farber
Dear Grade Six Parent/Guardian:

I would like to invite your son/daughter to take part in my Northeastern University Doctoral study entitled: *Service Learning, Early Adolescents, and Personal Growth*. As part of my dissertation research, I am conducting a study about service learning. I would like to conduct interviews with students and I think your son/daughter could offer valuable information for this research. For your son/daughter to participate in this activity, I will need to have your consent. Your son/daughter’s participation is completely voluntary and he or she can decide not to participate without any repercussions.

Once I complete my proposal of this study and receive approval from Northeastern University, I will formally request your son/daughter’s participation and your parent/guardian approval. At this time, I am simply looking for an initial interest response from families. Please be aware that agreeing or not agreeing to participate in this study will have no effect on your son/daughter’s rights, benefits, or services that your son/daughter would otherwise have as a student. Also, any participation in the study will be completely confidential; names and other personal information will not be used.

If you have any questions about the study, you or your parent can contact me by phone at 802-223-5429 extension 316 or via e-mail to farber.k@husky.neu.edu. Thank you in advance for your time.

With gratitude,

Katy Farber
Appendix C

Permission from Participant and Participant’s Guardian

Signed Informed Consent to Participate in Research

Northeastern University, College of Professional Studies Investigator Name: Katherine Farber, Doctoral Candidate & Principal Researcher, Dr. Sara Ewell, Principal Investigator

Title of Project: Service Learning, Early Adolescents, and Personal Growth

Dear Prospective Participant Guardian:

This year, I will be conducting a research study as part of the requirements to earn a Doctorate in Education from Northeastern University. I am planning to complete a six month qualitative research project on service learning at your child’s school. The goal explore the experiences of sixth grade students in this project and how their experiences related to personal growth. The research will involve interviews, regular observations, and analysis of student writing. Therefore, I am writing today to ask your permission for your child to participate in this action research project.

As part of the informed consent process, it is important to clarify the following parameters of the research:

• Participation in this study is completely voluntary and you may opt out at any time.
• Participants will not be provided remuneration for their participation other than what is listed below.
• As a thank you for participating, students will receive a five dollar gift certificate to Amazon.
• It is anticipated that participation for individuals and sites, may result in indirect benefits. Students will be directly involved in the research and this can be empowering for students.
• The site and participants will not be identified. Pseudonyms will be used for all reporting purposes. Although absolute confidentiality, at the local level, may not be guaranteed, all efforts to protect your identity will be maintained throughout the data collection and reporting process.
• Your participation, or lack thereof, will in no way effect your child’s grades, assessments, or any other school related issue. This research is not intended for evaluative purposes. It is strictly for information gathering.
• A transcript of student interviews may be provided for students to review. This process, called “member checking”, helps to validate the transcripts, analysis, and interpretation. Any comments will be documented and incorporated into the final dissertation.
• All digital recordings, notes, and transcripts of interviews will be securely maintained in a locked file cabinet within my residence and destroyed at the completion of the study.
As the study is designed, I do not anticipate any harm or risk to your child as a study participant, I am seeking your consent for the following:

**Interview:** Interviews will take place both individually three times during the six month period. Interviews will be held in a classroom and be conducted between the hours of 2:00 p.m. and 3:30 p.m., or at another time that is convenient and does not interfere with student interests and needs.

**Identity Maps:** Students will be asked to create identity maps at the beginning and end of the study period as part of the research. This is a regular class activity that helps students explore their own self identities and could provide more insight into the students’ experiences.

Should you have any questions or concerns about participation in this research, please contact me at: farber.k@husky.neu.edu or 802-223-4022. You may also contact Dr. Sara Ewell, Principal Investigator, at s.ewell@neu.edu. Should you have any questions pertaining to your rights throughout this research, you may contact Nan. C. Regina, Human Subject Research Protection, 960 Renaissance Park, Northeastern University, Boston, MA 02115. She may also be reached at n.regina@neu.edu or 617-373-4588. This contact may remain anonymous.

**By providing you signature below, you are indicating your permission for your child to participate to in this research. In addition, your child must assent to participating in the research as well:**

__________________________________________________
Participant Signature    Date

__________________________________________________
Participant’s Printed Name

__________________________________________________
Participant Guardian’s Signature    Date

__________________________________________________
Participant’s Guardian Printed Name

Thank you!

Katherine Farber, Principal Researcher
Appendix D

Identity Mapping

Using this website (https://www.visualthesaurus.com/cm/lessons/mapping-your-identity-a-back-to-school-ice-breaker/) and lesson plan, including this sample, students will create identity maps at the beginning and at the end of the service learning 6 month project.
Appendix E
Permission form for Administrators

Signed Informed Consent to Conduct Research.
Northeastern University, College of Professional Studies
Investigator Name: Katherine Farber, Doctoral Candidate & Principal Researcher,
Dr. Sara Ewell, Principal Investigator
Title of Project: Service Learning, Early Adolescents, and Personal Growth

Dear Superintendent,

This year, I will be conducting a research study as part of the requirements to earn a Doctorate in Education from Northeastern University. I am planning to complete a six month qualitative research project on a service learning project at your school. The goal is to explore the experiences of sixth grade students in this project and how their experiences related to personal growth. The research will involve interviews, regular observations, and analysis of student writing.

As I begin to prepare for my doctoral research project, it is necessary for me to secure a site for my case study. I have selected your school as a research site. This letter will serve to give you an overview of the research. Your informed consent is required to allow access to sites and student participants.

As part of the informed consent process, it is important to clarify the following parameters of the research:

• Participation in this study is completely voluntary and students may opt out at any time.
• Participants will not be provided remuneration for their participation other than what is listed below.
• As a thank you for participating, students will receive a five dollar gift certificate to Amazon.
• It is anticipated that participation for individuals and sites, may result in indirect benefits. Students will be directly involved in the research and this can be an empowering process.
• The site and participants will not be identified. Pseudonyms will be used for all reporting purposes. Although absolute confidentiality, at the local level, may not be guaranteed, all efforts to protect student identity will be maintained throughout the data collection and reporting process.
• Students’ participation, or lack thereof, will in no way effect student grades, assessments, or any other school related issue. This research is not intended for evaluative purposes. It is strictly for information gathering.
• A transcript of student interviews may be provided for students to review. This process, called “member checking”, helps to validate the transcripts, analysis, and interpretation. Any comments will be documented and incorporated into the final dissertation.
• All digital recordings, notes, and transcripts of interviews will be securely maintained in a locked file cabinet within my residence and destroyed at the completion of the study.

As the study is designed, I do not anticipate any harm or risk to students as a study participants. These are the significant parts of the proposed study at your school:

**Interview:** Interviews will take place both individually three times during the six month period. Interviews will be held in a classroom and conducted between the hours of 2:00 p.m. and 3:30 p.m., or at another time that is convenient and does not interfere with student interests and needs.

**Identity Maps:** Students will be asked to create identity maps at the beginning and end of the study period as part of the research. This is a regular class activity that helps students explore their own self identities and could provide more insight into the students’ experiences.

**Observations and Writings:** Ongoing, throughout the school year, the investigator will conduct observations of student interactions, behavior, and written communication in reflective journals and others assignments. These will be part of the research project and student identities will be protected just as they will be protected in all parts of the study.

Should you have any questions or concerns about participation in this research, please contact me at: farber.k@husky.neu.edu or 802-223-4022. You may also contact Dr. Sara Ewell, Principal Investigator, at s.ewell@neu.edu. Should you have any questions pertaining to your rights throughout this research, you may contact Nan. C. Regina, Human Subject Research Protection, 960 Renaissance Park, Northeastern University, Boston, MA 02115. She may also be reached at n.regina@neu.edu or 617-373-4588. This contact may remain anonymous.

By providing you signature below, you are indicating your permission for this research.

Administrator’s Printed Name

**District Superintendent:** __________________________________________________
Administrator Signature Date

Administrator’s Printed Name

Thank you!

Katherine Farber, Principal Researcher
Appendix F

Permission Letter Principal

Dear School Principal,

As you likely know, I am currently enrolled in a doctoral program at Northeastern University and am in the process of completing the dissertation stage of the program. My research is focused early adolescent students and service learning. Specifically, I am interested in researching a service learning program in your school. I’m interested in exploring student and teacher perceptions of this project and any benefits it may have to students and the school community.

Using a qualitative method approach, I will investigate a service learning project through the perspectives of various stakeholders in the school community: the principal, a classroom teacher, and several grade six students. Their stories will lead to meaningful insight into the impact of service learning pedagogy on early adolescent students, a subject that is currently lacking in educational research. The research process will involve interviewing students and school staff, observing students, collecting written reflections, and developing general themes inducted by the analysis of data. I believe this case study will benefit the educational community by supplying research about a curricular practice and program that could be used district wide. Specific recommendations and implications will shared that could benefit your school as well.

If you have any questions regarding this study, please contact me directly at (802) 223-5429 extension 316, or email at farber.k@husky.neu.edu or the chairperson of my committee, Dr. Sara Ewell at Northeastern University, s.ewell@neu.edu.

I look forward to hearing from you regarding this request for permission. Please sign the form attached to this letter, as I need written permission from you to conduct the research. Thank you in advance for your time and please let me know if you have any questions about this exciting research opportunity.

Sincerely,

Katy Farber
(home) 223-4022
Signed Informed Consent to Conduct Research.
Northeastern University, College of Professional Studies
Investigator Name: Katherine Farber, Doctoral Candidate & Principal Researcher, Dr. Sara Ewell, Principal Investigator
Title of Project: Service Learning, Early Adolescents, and Personal Growth

Dear School Principal,

This year, I will be conducting a research study as part of the requirements to earn a Doctorate in Education from Northeastern University. I am planning to complete a six month qualitative research project on an elementary school in a northeastern state. The goal is to explore the experiences of sixth grade students in this project and how their experiences related to personal growth. The research will include interviews, regular observations, and analysis of student writing.

As I begin to prepare for my doctoral research project, it is necessary for me to secure a site for my case study. I have selected your school as a research site. This letter will serve to give you an overview of the research. Your informed consent is required to allow access to sites and student participants.

As part of the informed consent process, it is important to clarify the following parameters of the research:

• Participation in this study is completely voluntary and students may opt out at any time.
• Participants will not be provided remuneration for their participation other than what is listed below.
• As a thank you for participating, students will receive a five dollar gift certificate to Amazon.
• It is anticipated that participation for individuals and sites, may result in indirect benefits. Students will be directly involved in the research and this can be an empowering process.
• The site and participants will not be identified. Pseudonyms will be used for all reporting purposes. Although absolute confidentiality, at the local level, may not be guaranteed, all efforts to protect student identity will be maintained throughout the data collection and reporting process.
• Students’ participation, or lack thereof, will in no way affect student grades, assessments, or any other school related issue. This research is not intended for evaluative purposes. It is strictly for information gathering.
• A transcript of student interviews may be provided for students to review. This process, called “member checking”, helps to validate the transcripts, analysis, and interpretation. Any comments will be documented and incorporated into the final dissertation.
• All digital recordings, notes, and transcripts of interviews will be securely maintained in a locked file cabinet within my residence and destroyed at the completion of the study.

As the study is designed, I do not anticipate any harm or risk to students as a study participants.
These are the significant parts of the proposed study:

**Interview:** Interviews will take place both individually three times during the six month period. Interviews will be held in a classroom between the hours of 2:00 p.m. and 3:30 p.m., or at another time that is convenient and does not interfere with student interests and needs.

**Identity Maps:** Students will be asked to create identity maps at the beginning and end of the study period as part of the research. This is a regular class activity that helps students explore their own self identities and could provide more insight into the students’ experiences.

**Observations and Writings:** Ongoing, throughout the school year, the investigator will conduct observations of student interactions, behavior, and written communication in reflective journals and others assignments. These will be part of the research project and student identities will be protected just as they will be protected in all parts of the study.

Should you have any questions or concerns about participation in this research, please contact me at: farber.k@husky.neu.edu or 802-223-4022. You may also contact Dr. Sara Ewell, Principal Investigator, at s.ewell@neu.edu. Should you have any questions pertaining to your rights throughout this research, you may contact Nan. C. Regina, Human Subject Research Protection, 960 Renaissance Park, Northeastern University, Boston, MA 02115. She may also be reached at n.regina@neu.edu or 617-373-4588. This contact may remain anonymous.

**By providing you signature below, you are indicating your permission for this research.**

Administrator’s Printed Name

**Building Principal:** ________________________________
Administrator  Signature  Date

____________________________

Administrator’s Printed Name

Thank you!

Katherine Farber, Principal Researcher
Appendix G

Permission for School Staff

Signed Informed Consent to Conduct Research.
Northeastern University, College of Professional Studies
Investigator Name: Katherine Farber, Doctoral Candidate & Principal Researcher, Dr. Sara Ewell, Principal Investigator
Title of Project: Service Learning, Early Adolescents, and Personal Growth

Dear School Staff,

This year, I will be conducting a research study as part of the requirements to earn a Doctorate in Education from Northeastern University. I am planning to complete a six month qualitative research project on service learning at your child’s school. The goal explore the experiences of sixth grade students in this project and how their experiences related to personal growth. The research will involve interviews, observations, and analysis of student writing.

As I begin to prepare for my doctoral research project, it is necessary for me secure a site for my case study. I have selected your school as a research site. This letter will serve to give you an overview of the research. Your informed consent is required to allow access to sites and student participants.

As part of the informed consent process, it is important to clarify the following parameters of the research:

• Participation in this study is completely voluntary and staff may opt out at any time.
• Participants will not be provided remuneration for their participation other than what is listed below.
• It is anticipated that participation for individuals and sites, may result in indirect benefits. Students will be directly involved in the research and this can be an empowering process.
• The site and participants will not be identified. Pseudonyms will be used for all reporting purposes. Although absolute confidentiality, at the local level, may not be guaranteed, all efforts to protect student identity will be maintained throughout the data collection and reporting process.
• A transcript of interviews may be provided for you to review. This process, called “member checking”, helps to validate the transcripts, analysis, and interpretation. Any comments will be documented and incorporated into the final dissertation.
• All digital recordings, notes, and transcripts of interviews will be securely maintained in a locked file cabinet within my residence and destroyed at the completion of the study.

As the study is designed, I do not anticipate any harm or risk to participants as a study participants. These are the significant parts of the proposed study:

Interview: Interviews will take place both individually three times during the six month period.
Interviews will be held in a classroom. Interviews and will be conducted between the hours of 2:00 p.m. and 3:30 p.m., or at another time that is convenient and does not interfere with student interests and needs. It is anticipated these interviews will take place in October, January, and March.

Should you have any questions or concerns about participation in this research, please contact me at: farber.k@husky.neu.edu or 802-223-4022. You may also contact Dr. Sara Ewell, Principal Investigator, at s.ewell@neu.edu. Should you have any questions pertaining to your rights throughout this research, you may contact Nan. C. Regina, Human Subject Research Protection, 960 Renaissance Park, Northeastern University, Boston, MA 02115. She may also be reached at n.regina@neu.edu or 617-373-4588. This contact may remain anonymous.

By providing you signature below, you are indicating your permission for your participation in this research.

School Staff member: __________________________________________________

____________________________  ______________________________
Signature                  Date

____________________________________
School Staff member’s Printed Name

Thank you!

Katherine Farber, Principal Researcher
Appendix H
Student Questionnaire

Student Questionnaire
Fall 2015

Name_________________________

Directions: In an effort to learn more about your feelings about school and how you see yourself, please answer these questions the best you can.

1. What is school like for you?

2. How do you feel about entering fifth grade?

3. How do you feel about school?

4. How does your family feel about school?

5. What are you looking forward to in the service learning project (the Sustainability course) and in fifth grade in general?

THANK YOU!
Appendix I

Student Interview

Thank you very much for taking the time to participate in this interview. I will be in touch with you within the next few days if I need any follow up information. You, or your parent/guardian can contact me anytime about this interview and this study in general.

Introductory Script: Thank you for being willing to participate in this study. As a reminder I am completing this study as part of my work at Northeastern University. You won’t be graded in any way for your participation, nor will your results impact our relationship or grades.

Our interview will be audio (sound) recorded. The only people who will hear the recording will be the transcriptionist and me. (The transcriptionist takes the recording and creates a written version of everything that we say). I will erase the recording when the transcription is complete. I will also use a pseudonym (a made up name) when I use your information in my study. If at any time you decide that you don’t want to participate in the study anymore, that is absolutely fine. There will be no penalty for stopping your participation. Do you have any questions?

During the interview, I will ask you some questions. I am going to ask you a few questions about your experiences in the service learning project. I am hoping that you will share stories and thoughts that are relevant to the questions. You can choose to skip any questions that you don’t want to answer. Do you have any questions?

1. How do you feel about your service learning experience?
2. How do you feel about school? Is it different from the beginning of the year?
3. Did participating in the program change how you feel about your school, yourself, or your thinking about the future?
4. How have you changed this year? Why?
5. Do you have any other thoughts about sixth grade, or this program?

Thank you very much for taking the time to participate in this interview. I will be in touch with you within the next few days if I need any follow up information. You, or your parent/guardian can contact me anytime about this interview and this study in general.
Appendix J

Staff Interview

Introductory Script: 

Thank you for being willing to participate in this study. As a reminder I am completing this study as part of my work at Northeastern University.

Our interview will be audio (sound) recorded. The only people who will hear the recording will be the transcriptionist and me. (The transcriptionist takes the recording and creates a written version of everything that we say). I will erase the recording when the transcription is complete. I will also use a pseudonym (a made up name) when I use your information in my study. If at any time you decide that you don’t want to participate in the study anymore, that is absolutely fine. There will be no penalty for stopping your participation. Do you have any questions?

During the interview, I will ask you some questions. I am going to ask you a few questions about your experiences in the service learning project. I am hoping that you will share stories and thoughts that are relevant to the questions. You can choose to skip any questions that you don’t want to answer. Do you have any questions?

1. Please describe the service learning experience at the school.
2. How do you feel about this program?
3. Do you see any changes in the students who participate in this program? If so, what are they?
4. Do you notice any changes in the school culture or community based on this project? If so, what are they?
5. Please describe any benefits or challenges this project has presented in the school.
6. Do you think this kind of program matches a student and/or community need?

Thank you very much for taking the time to participate in this interview. I will be in touch with you within the next few days if I need any follow up information. You, or your parent/guardian can contact me anytime about this interview and this study in general.