

Running Head

Implementing Service-Learning in Elementary E1 Montessori Setting

By

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Abstract

Literature on service-learning as an effective and developmentally appropriate methodology in the primary elementary setting is scarce. This action research examined a.) The impacts of implementing service-learning with first, second, and third grade students and b.) The shared components of Montessori and service-learning pedagogy: curricular integration, intrinsic motivation, hands-on cooperative learning, student voice, and service to others. The study took place in a mixed age class of six to nine-year old students in a public Montessori school over a 12-week period. 20 students collaborated with three local community partners to restore a city rain garden, start seedlings for a local community garden, and plant native plants at a prairie habitat restoration site. The Montessori botany, cosmic education fundamental needs, and character education curricula were integrated into the service-learning projects. Through qualitative analysis of observations, field notes, interviews, surveys, and use of focus groups during each of the 5 stages of service-learning, the study found service-learning provided a framework for connecting lower elementary students to their local community in a meaningful way while addressing real community needs. Results also confirmed the integration of academic curriculum with community partnerships improved student engagement in school and learning.

*Keywords:* service-learning, Montessori, community engagement, early elementary grades1-3, pre-adolescent.

## **Introduction**

Service learning is an approach to education where students meet a community need and have an active role in planning, implementing, and reflecting on the project. The universities I attended as an undergraduate student had strong, nationally recognized service-learning programs which significantly shaped my learning experiences. My current school district is at the initial steps of implementing service-learning at every grade level. My background in non-profit work and service-learning puts me in a place where I could contribute to the conversation. I specifically wanted to explore the possibilities of service-learning at the primary elementary level in the Montessori setting. The intention of this literature review and action research project was to synthesize the pedagogies of Montessori education and Service-Learning. Service-learning combines hands-on learning, student decision making, the world beyond the school walls as the classroom, stewardship, and connects students to their community. These are all components of Montessori education. Through the planning and implementation of a service-learning project in a lower elementary (grades1-3) Montessori classroom, this study asked the following questions:

Primary Question:

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How does service-learning impact the learning of E1 students physically, social/emotionally and cognitively?

Subsidiary Questions:

- a. How can service-learning support aspects of Montessori education?
- b. Can the process of investigation, planning, action, reflection and demonstration in service-learning be successfully implemented as an authentic learning experience for E1 students?
- c. How does participation in service-learning impact child/teacher perception of the school experience?

### **Literature Review**

Service-learning projects have historically taken place at the undergraduate, high school, and middle school level therefore much of the research around civic/ community engagement centers on high school and college-aged students (Billig, 2009; Serriere, 2011). This research has shown that service-learning has an enduring positive impact on students' academic achievement, civic engagement, and personal and social development (National Commission on Service-Learning, 2002). Although a small body of research focuses on elementary students in service-learning, research specifically targeted to the primary grades 1, 2, and 3 in service-learning is limited (Scott, 2015). This literature review can benefit primary elementary teachers seeking to engage their 1-3 grade students in community engagement and actively planning, implementing, and reflecting on service-learning. It also serves the purpose of helping Montessori teachers: a.) connect the key components of Montessori and service-learning pedagogy and b.) have a practical framework to implement meaningful, interdisciplinary, hands-on learning experiences.

### **Service-Learning Defined**

The National Commission on Service-Learning defines service-learning as an innovative teaching methodology that integrates community service with academic study to teach community

engagement, enrich learning, and strengthen communities (NCSL, 2002; Terry & Bohnenberger, 2003). Other researchers include problem-based learning in their definition of an effective service-learning pedagogy. Both the Wisconsin Department of Public Instruction and the Minnesota Department of Education mention students actively identifying and solving real-world problems (WI DPI, 2010; MN DOE, 2012.) Along with including problem-based learning, the Problem Solution Project integrates constructivism, critical theory, and critical pedagogy into its definition of service-learning. Stenhouse proposes that service-learning is a tool for “challenging the status quo and cultivating agency among teachers and students” (Stenhouse, 2014, p. 1465).

Other definitions emphasize collaboration and reciprocity which is suggested in the hyphenated name: service-learning. Both service and learning are equally important where the hyphen “represents the reciprocal nature of service-learning in which both the students and the community learn from each other” (Taylor, 2004, p. 8). All literature included the component of reflection to make it a truly authentic academic experience (Fitzgerald, 1997; Billig, 2011).

Scott’s definition concisely synthesized the above definitions. “Service-learning must be a collaborative effort in which authentic and articulated learning goals are present, responses to genuine community needs are central, youth decision making occurs, and analytic reflection is used at the end to explore the impact on the self and the community” (Scott, 2015, p. 355).

### **Distinctions between Service-Learning, Community Service, and Character Education**

What sets service-learning apart from character education and community service? Reflection and academic integration make service-learning distinct. Literature points out that both character education and community service can have social-emotional, health, and civic outcomes but service-learning also has academic outcomes (Corporation for National and Community Service, 2007; Furco, 2002; Billig, 2011). Character education differs from Service-learning in that it may not have an action component whereas the foundation of service-

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learning is in action. You cannot have service-learning without the act of service. While students may read and discuss about cooperation and interaction in character education, service-learning projects offer students opportunities to expand their knowledge of the world around them by being actively involved, constructing knowledge, and creating their own understanding and rules (Lake, 2012).

Service-learning has been confused with community service because both share the component of action (National Commission on Service-Learning, 2002). An authentic service-learning project has all five stages of investigation, planning, action, reflection, and demonstration. Community service actively involves students in the local and global community but service-learning directly links the action with the school curriculum and takes those actions further through the steps of reflection and demonstration. These steps of thinking back over the service and demonstrating the learning gained lead students to turn the service action into an authentic learning experience (Fitzgerald, 1997).

### **Standards and Indicators of Quality in service-learning**

What qualifies as a well-designed service-learning program? In 2000, The Wisconsin Department of Public Instruction and Service-Learning Project Director Stanley Potts created the Wisconsin Four Point Test to delineate the design features of a high quality service-learning project (Wisconsin DPI, 2001, Monsour, 2000).

#### **Wisconsin Service-Learning 4-Point Test.**

1. Young people must be involved and empowered in all phases of the project.
2. The project must deliver genuine service to the community.
3. The project must be linked to classroom learning.
4. The project must include reflection and evaluation

Building off of successful state-initiated efforts, The National Youth Leadership Council in 2008 created the K-12 Service-Learning Standards for Quality Practice in order to have a consistent message at a

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national level. (Billig, 2009; National Youth Leadership Council, 2008). The standards and indicators for quality practice of service-learning in the K-12 environment listed below are based on the expertise from service-learning practitioners from 24 states and research-based literature (Billig, 2011).

### **K-12 Service-Learning Standards for Quality Practice.**

#### **Meaningful Service**

Service-learning actively engages participants in meaningful and personally relevant service activities.

#### **Reflection**

Service-learning incorporates multiple challenging reflection activities that are ongoing and that prompt deep thinking and analysis about oneself and one's relationship to society.

#### **Youth Voice**

Service-learning provides youth with a strong voice in planning, implementing, and evaluating service-learning experiences with guidance from adults.

#### **Progress Monitoring**

Service-learning engages participants in an ongoing process to assess the quality of implementation and progress toward meeting specified goals, and uses results for improvement and sustainability.

#### **Link to Curriculum**

Service-learning is intentionally used as an instructional strategy to meet learning goals and/or content standards.

#### **Diversity**

Service-learning promotes understanding of diversity and mutual respect among all participants.

#### **Partnerships**

Service-learning partnerships are collaborative, mutually beneficial, and address community needs.

#### **Duration and Intensity**

Service-learning has sufficient duration and intensity to address community needs.

### **Montessori Pedagogy and Service-learning Pedagogy Connections**

The National Youth Leadership Council's "K-12 Service-Learning Standards for Quality Practice" and the American Montessori Society's "Characteristics of an Authentic Montessori School" by Dr. Nancy McCormick Rambush provide a comparison of Montessori and service-learning pedagogy. Below are the Montessori characteristics from Dr. Rambush's publication that align with service-learning pedagogy.

*The following ideas are excerpted from *The Authentic American Montessori School: A Guide to the Self-Study, Evaluation, and Accreditation of American Schools Committed to Montessori Education*, by Dr.*

*Nancy McCormick Rambush and Dr. John Stoops, published in 1992 by the Commission on Elementary Schools of the Middle States Association of Colleges and Schools and the American Montessori Society.*

### **Characteristics of an Authentic Montessori School.**

#### **Intrinsic Motivation to Learn:**

In Montessori programs, children do not work for grades or external rewards, nor do they simply complete assignments given them by their teachers. Children learn because they are interested in things, and because all children share a desire to become competent and independent human beings.

#### **Service to Others:**

Montessori's spiritual perspective leads Montessori schools to consciously organize programs of community service ranging from daily contributions to others within the class or school setting, to community outreach programs that allow children and adults to make a difference in the lives of others. The fundamental idea is one of stewardship.

#### **Universal Values:**

Montessori deliberately teaches children not only appropriate patterns of polite behavior, but seeks to instill basic universal values within the core of the child's personality. These values include self-respect, acceptance of the uniqueness and dignity of each person we meet, kindness, peacefulness, compassion, empathy, honor, individual responsibility, and courage to speak from our hearts.

#### **A Child-Centered Environment**

The focus of activity in the Montessori setting is on children's learning, not on teachers' teaching.

#### **Hands On Learning:**

In Montessori, students rarely learn from texts or workbooks. In all cases, direct personal hands-on contact with either real things under study or with concrete models that bring abstract concepts to life allow children to learn with much deeper understanding.

#### **Global Understanding:**

All Montessori schools are to large degree international schools. They not only tend to attract a diverse student body representing many ethnic backgrounds, religions, and international backgrounds, but they actively celebrate their diversity. The curriculum is international in its heritage and focus, and consciously seeks to promote a global perspective.

#### **Cooperation and Collaboration:**

Montessori children are encouraged to treat one another with kindness and respect. Insults and shunning behavior tends to be much more rare. Instead we normally find children who have a great fondness for one another, and who are free from the one-up-manship and needless interpersonal competition for attention and prestige. Because children learn at their own pace, and teachers refrain from comparing students against one another.

#### **Mixed Age Groups:**

Montessori classrooms gather together children of two, three, or more age levels into a family group.



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Generally student will work individually or in small, self-selected groups. There will be very few whole group lessons

Children remain together for several years, with only the oldest students moving on to the next class at year's end.

### **Hands-on Learning and a Child-centered Environment: A Constructivist Approach**

Maria Montessori, like educational theorists John Dewey, Jean Piaget, Lev Vygotsky, and Jerome Bruner, emphasized the importance of activity and experience in young children's social and cognitive learning (Lake, 2012; Lillard, 2007). Rather than passively taking in knowledge like an empty vessel, constructivists view the child as constructing meaning from interaction with their environment (Lillard, 2007). In Montessori's own words, "We discovered that education is not something which the teacher does, but it is a natural process which develops spontaneously in the human being. It is not acquired by listening to words, but by virtue of experiences in which the child acts on his environment" (Montessori, 1967, p.8).

In the Montessori setting, one way children experience hands-on learning is by having the majority of their school day to self-select the Montessori materials and manipulate them with their hands. This interaction helps children link the concrete activities to abstract concepts in a developmentally appropriate way. Another way Montessori children experience meaningful hands-on learning is through the Practical Life curriculum. Watering plants, polishing silverware, slicing fruits and vegetables, and other Practical Life activities provide students with active movements that are rooted in reality. Through painting walls, engaging in dialogue, and graphing data, Service-Learning can also be seen as practical life skills for students that help students apply their learning in service to the academic setting (Lake, 2012). Montessori's constructivist approach and service-learning projects both include the importance of children being directly involved in the learning experience (Lillard, 2007; Lake, 2012).

### **Multi-age Groupings, Cooperation and Collaboration: Creating Community**

Montessori schools intentionally place children in groups of two or more grade levels with the goal of creating a community of learners through peer tutoring, imitation, and collaboration

(Lillard, 2007). Montessori found through her observations that “children of different ages help one another. The younger ones see what the older ones are doing and ask for explanations... The older ones are happy to be able to teach what they know. There are no inferiority complexes, but everyone achieves a healthy normality through the mutual exchange” (Montessori, 1967, p. 226-227). When students of different ages are grouped together, they need to have opportunities to learn through imitation of older peers and through mentoring of younger peers to truly be following multi-age philosophy. Some traditional schools use split-level classes for economic reasons where different grade levels are combined in one room but seldom interact and teacher-centered approaches such as memorization and whole group instruction are used (Broome, 2011).

In the Montessori multi-age setting in the elementary years, learning is built on shared experiences and social interactions with peers. When observing the differences between pre-school age children and elementary-age children, Montessori noted “(the elementary-age child’s) need to associate with others, not merely for the sake of company, but in some sort of organized activity. He likes to mix with others in a group wherein each has a different status” (Montessori, 1972, p. 6). The National Association for the Education of Young Children (NAEYC), in their publication of *Developmentally Appropriate Practice (DAP)*, also noted that “children learn best in the context of a community” (Bredekamp, 2009, p.13).

Another advantage of multi-age classrooms is children are accustomed to each child learning at her own pace, and competition as an extrinsic reward is not used (Rambush, 1992). Maria Montessori saw cooperation and collaboration not just a structure for the Montessori curriculum in the classroom, but as a way of life beyond the classroom walls. “If human unity-which is a fact in nature-is going at last to be organized, it will be done only by an education that will give appreciation of all that has been done by human cooperation, and readiness to

shed prejudices in the interest of common work for the cosmic plan, actively expressed in the whole of creation” (Montessori, 1972, p. 74).

Recent research has also found multi-age education as an effective tool to put student-centered constructivist theory into practice through the implementation of service-learning projects (Broome, 2011; Stenhouse, 2014). Service-learning practitioners who used flexible groupings found that their students gained leadership opportunities by using peer review, role-playing scenarios, and "what if" questions to give peer feedback in the reflection stage of service-learning (Broome, 31). Other researchers also found that service-learning projects that put emphasis on student voice and participation benefitted from a scaffolding approach to help the younger students gradually acquire the skills to participate more as partners in service-learning (Serriere, 2011). In art educator Karen Heid's multi-age service learning project where 3<sup>rd</sup>-5<sup>th</sup> grade students installed a mosaic art piece, she observed the students' motivation and belief about their abilities to brainstorm, prepare, and carry out the mosaic project increase when working in a mixed-age group (Broome, 2012). Other multi-age educators in this study found that students often gravitated to work cooperatively in pairs or groups, which created a collaborative instead of competitive environment. These findings in service-learning research reflect the aims of the Montessori elementary curriculum to “uniquely meet the children's need in the second plane to form themselves as social beings, capable of contributing to others, both following and leading in group effort” (Lillard, 1996 p. 70).

**Cosmic Education: Curriculum of Integration and Intrinsic Motivation**

“Just as the small child cannot sit still because he is in need of movement, so the older child, who seems troublesomely curious over the what, why, and where fore of everything he sees, is building himself up by this mental activity; and for this reason must be given a wide field of culture to feed” (Montessori, 1973, p.6). Maria Montessori developed Cosmic Education as an integrated curriculum of history, culture, geography, biology, and physical sciences to meet the developmental needs of imagination and curiosity in elementary school age children. She viewed the 6-12-year-old child's mind as wired to take in information holistically rather than compartmentalized in separate categories (Lillard, 1996). “It is necessary to make use of the psychological state which permits the view of things in their entirety, and to let them (the children) note that everything in the universe is interrelated. Thus, when the children

want to understand everything, the world which they have before them can fill that need.” (Montessori, 1973, p. 36).

### **Integration and Intrinsic Motivation in Service-learning**

A common theme found in the service-learning literature reviewed is that elementary students benefitted from the thematic nature of service-learning and were intrinsically motivated to learn when it was relevant to their lives. The researchers of The Jackson Elementary service project where elementary students and college students built a nature study center together were careful to keep intrinsic motivation as a driving force. “We knew that it was important for the kids to work for internal instead of external rewards. We didn’t want to undermine their intrinsic interest with excessive praise or controlling interpersonal styles” (Werner 2002, p.572). Research shows that emphasis on extrinsic rewards can send the message to students that they did the work for the reward rather than for the purpose of serving. Some service-learning models include celebration as a sixth stage after demonstration, but service learning practitioners caution the use of celebration for this reason (Billig, Root, & Lesse, 2005; Billig,2011). This focus on letting the work itself be an intrinsic reward instead of using praise, parties, or other forms of extrinsic motivation correlates with the Montessori view of how children learn best (Rambush, 1992).

Karen Heid and the art educators in multi-age settings found the thematic approach instead of narrowly organizing lesson plans around isolated skills increased intrinsic motivation (Broome, 2015). During the art service project, Heid observed on-task behavior, high student attendance, and a sense of accomplishment on the part of students when they demonstrated their completed project to the school community (Broome, 2015).

The thematic nature of service-learning was a solution for many schools who felt parts of their curricula were randomly sprinkled throughout the school year but not integrated into the school structure (Neeper, 2012; Zankowsky, 2009; Chessin, 2011). Zankowsky observed that service was not perceived as a “tacked-on thing” when her Montessori elementary school partnered with a non-profit organization and local experts to integrate their year-long culture study on Africa (Zankowsky, 2009, p.29). The first and second grade students of Lafayette Elementary in Oxford, Mississippi replaced their traditional one-day Earth Day activity to a year-round recycling project that included community partnerships, academic

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reflection, and student planning (Chessin, 2011). Another elementary school in Oregon implemented a multi-year service learning project to integrate environmental education and service into the every-day life of their school. “Environmental education became part of our school culture because we were able to move beyond one-shot lessons to systemic programs that developed student awareness and critical-thinking skills” (Neeper, 2012, p. 45).

In Scott and Graham’s study on empathy and community engagement with first, second, and fifth graders, character education curriculum was successfully integrated with a unit on civic responsibility and community helpers through a service-learning program without interfering with the strict curriculum guidelines at the school (Scott, 2015). Other literature also stated that educators were concerned about how to include meaningful curriculum projects because they did not sense they would be supported unless instructional time was exclusively on language arts, math, or test preparation mandated by their school districts (Ponder, 2011, Lake, 2012). The flexibility of service-learning to be easily applied to a variety of subjects (science, writing composition, etc.) was consistently found as one way to structure intrinsic motivation and apply knowledge directly (Monsour, 2000; Stenhouse, 2014).

### **Cosmic Education: Curriculum of Universal Values and Global Understanding**

Cosmic Education serves the purpose of not only bringing the universe into the elementary classroom as an interdisciplinary curriculum, but intends for children to understand the universe as interdependent where all living and nonliving things have a “cosmic task” – a sense of place in the world. From the coral’s cosmic task to feed itself and in the process cleanses the ocean waters to the tree’s cosmic task of purifying the air through its instinct to take in carbon dioxide and give off oxygen, children discover the sciences with a sense of gratitude (Duffy, 2014; Wolf, 1996). This realization that there is one universe shared as home to all living beings also promotes the virtues of unity and stewardship. Whatever is done to the ecosystem ultimately is done to ourselves.

Gratitude and unity are universal values not only highlighted in Cosmic Education’s earth and life sciences but also in the study of culture, early humans, and the Fundamental Needs of Humans. Montessori students explore the work of past human beings fulfilling their fundamental needs in the context of how those discoveries still benefit humans today. Maria Montessori articulated that the purpose of cultural studies “is that the individual from the earliest years should be placed in relation with humanity... (Montessori, 1973, p.26)”. As Montessori students contemplate human’s place on the

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earth as a species, they also discern the role they individually play in their lifetime (Lilliard, 2007, Duffy, 2014).

### **Service to Others: Peace Education in Action**

*What am I? What is the task of men in this wonderful universe? Do we merely live here for ourselves or is there something more for us to do?* (Montessori, 1973, p.10).

Maria Montessori understood the elementary years as an ideal period to harness children's natural tendency to question "What is my task, what can I do?" (Lillard, 1996, Zankowsky, 2009).

Montessorians put the philosophy of Cosmic Education from theory to practice through providing students practical ways to act on their ponderings on their role in life. Again, the emphasis is learning by doing. Caring for classroom plants and animals, "going out" community service activities, and environmental stewardship are examples of how service to others offers opportunities to apply learning in their classroom, school and broader communities for the greater good. (Wade, 1997; Wolf, 1996; Rambush, 1992). This early exposure allows that "Montessori elementary children will not have the distressing struggle of initially confronting the Who am I question in their adolescent or adult years" (Duffy, 2014 p.10).

### **Cosmic Task in Service Learning: community engagement and self-efficacy**

Community engagement and self-efficacy, one's confidence in his or her ability to contribute to the community through service (WI DPI, 2001), is a central theme in service-learning literature (Monsour, 1999). Service-learning practitioners in the elementary setting see the elementary years as the opportune time to have children engage in their community because developmentally children can understand issues in society (Terry & Bohnenberger, 2004; Scott, 2015). Based on the contributions of Dewey, Montessori, Bruner, and Piaget in child development theory, researchers conclude that elementary schools should create opportunities for young children to experience application of their learning (Lake, 2012). By starting at a young age, a lifelong ethic of service can be established. Research demonstrates that children from the time they first enter school, can grow in awareness of their responsibilities to their communities. (Stephans, 1995; Lake, 2012).

### **Conclusion of Literature Review**

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Montessori and service-learning are effective methodologies to apply constructivist, cooperative, integrated learning in the primary elementary years. Although the majority of service-learning studies have taken place at the adolescent and college-age years, service-learning researchers are reflecting on how the “the early grades represent a critical opportunity to lay a foundation upon which civic knowledge, skills and dispositions can grow” (Serriere, 2011, p.542). The literature reviewed on service-learning in the elementary setting has pointed out the following benefits to elementary-age children: improved student motivation in learning, increase in community engagement, positive interactions with adults and peers, and an optimistic perception that they could have a positive impact on their community.

### **Methodology**

#### **Current Study**

A small-scale qualitative study was used to answer the following question: How does service-learning impact the learning of E1 students physically, social/emotionally and cognitively? I implemented a service-learning program using the 5 stages of investigation, preparation/ planning, action, reflection, and demonstration within a 12-week period.

#### **Participants and Setting**

The study took place in a public 4k-6 grade Montessori elementary school in a small Upper-Midwest university town. The school district demographics are the following: White 92.3%, Asian/Pacific Islander 2.3%, African American 3.0%, Latino 1.3%, American Indian 1.1%, Students with Disabilities 10.8%, Free and Reduced Lunch 20.2%. The school’s population of approximately 185 students has similar demographics to the school district as a whole: White 95.1%, Asian/Pacific Islander 2.2%, African American 1.6%, Latino 1.1%, and Free and Reduced Lunch, 27%. Due to no special education services on site, students who qualify for formal IEP plans attend other schools in district that house special education. There are students with special needs that attend the Montessori school and opt out of special education classification in order to receive their education at the Montessori site.

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Data was collected from 6 first grade, 6 second grade, and 8 third grade students in my multi-age lower elementary classroom. All 20 students opted to participate in the study. 12 students are male and 8 are female. 18 of the 20 students have attended a Montessori school since age 5 in either a local private or current public setting. 2 students have a 504 plan, and 8 receive Title 1 reading intervention services. One student is eligible for special education services and has opted out in order to continue at current school.

### **Materials**

I used the following templates from *Servicing Learning in the PreK-3 Classroom: The What, Why, and How-To Guide for Every Teacher* by Dr. Vickie E. Lake to organize the brainstorming, reflection, and demonstration of our service.

1. Ready, Set, Serve! teacher planning form
2. Service-learning reflection questionnaire
3. Service-learning KWL and KFL charts
4. Service-Learning ABC reflection
5. Service-Learning Chain of Events
6. Documentation ideas check list

I also used "My Jeffers Journal" student reflection journals provided by the Jeffers Foundation, my own observation journal, the 2 X 4 X 8 Project elementary student survey from the collaboration between the Wisconsin Department of Public Instruction (DPI) and the Corporation for National Service, and photography of each of the 5 stages being implemented. My Montessori botany curriculum, culture curriculum on Fundamental Needs of Humans, Project Wet environmental education curriculum, and The Virtues Project Character Education curriculum were tied in to the service-learning as well.

### **Procedure**

#### Stage One: Investigation



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In stage 1, students identify a need to address. They can investigate this in their own school or out in their community. We started with taking a walk-through of our building and grounds to identify problems. The students came up with the following list:

1. No signs on teachers' doors
2. Peeling and chipped paint
3. Artwork falling off the walls
4. Lockers not opening well
5. Stained ceiling tiles
6. No plants by the windows
7. Incorrect light bulbs in lamps
8. Not enough color in school
9. Weeds in front of 1920's section of building
10. Students' clothing and things on hallway floor

After our walk-through and list creation, we gathered all the items left in our hallway. The students categorized the items and created a table with tally marks. I asked them to look at the list and see if they notice any patterns. One student mentioned that most of the things in the hallway were shoes and boots. One student then talked about what happens when you put wet boots in the metal lockers and that we needed a boot drying spot. Another person suggested we add a job to the classroom list so that there is a person that helps monitor the cleanliness of the hallway. After a student recorded our ideas, we put the pile of items in their correct spots and took a picture of the clean hallway. This particular investigation led right into a teachable moment where the students planned and implemented a solution right away.

### Stage Two: Planning and Preparation

The planning and preparation stage is the time to learn more in-depth about an issue. I contacted district personnel and several community organizations to find out who would be available to partner up for service with children ages six through nine. I did not receive a response back from some organizations. I also did not have district personnel follow through with a class visit to answer the

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students' questions and listen to their ideas for serving the school. These are the partnerships that were interested in working with our class:

1. St. Croix Valley Prairie Enthusiasts—Barbara Bend, volunteer, artist, and retired teacher
2. St. Croix Valley Habitat for Humanity Eco-Village AmeriCorps volunteer, Kayla Ludwigson
3. City of River Falls—Crystal Raleigh, Head civil engineer

My first contact was with Crystal Raleigh at River Falls City Hall. She shared the “Adopt a Pond” and “Adopt a Raingarden” program the city was implementing. We looked at a city map and she identified a large rain garden near the school that had become overgrown and was not adopted yet. We also discussed activities to activate their interest and build their understanding of storm water run-off. When I asked if the city had city land the students could learn more about through service, she directed me to the non-profit group The Prairie Enthusiasts.

When I contacted the Prairie Enthusiasts, the Head of the local St. Croix Chapter Evonne told me my phone call was perfect timing. She had just returned from the annual state Prairie Enthusiasts convention and that they were looking for more connections with local schools. They have had college students volunteer and children with parents but no elementary and middle schools. I was mindful that for a service-learning project to be effective, it needs to address a need of the community and be a mutually benefitting relationship to the partner and to the children serving. Evonne explained that most of their work involved chain saws, burning the prairie, and sometimes using chemicals. She said she would think of ways young students could help and get back to me.

The next person I contacted was the site director of the Habitat for Humanity Eco-Village Jim Cooper. I had read about how local middle school students had helped spread mulch on the Eco-Village paths and saw a possibility that elementary students could also serve in some way. He explained that they usually only allow students 16 years or old to volunteer since they also work in possibly dangerous situations (power tools, on top of roofs, etc.) He showed enthusiasm for the students helping in some way with the landscaping. In the future they plan on having a pollinator mix put in on the south facing slope of the Eco Village and they also have rain gardens to install. He suggested I set up a meeting with their AmeriCorps outreach coordinator Kayla Ludwigson. Kayla had recently turned in a grant proposal for seeds and supplies to start an edible community garden at the Eco-Village. When she found out that

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Habitat for Humanity was awarded the grant, she asked if our class could be in charge of planting the herb seeds and caring for the seedlings. Again the timing was fortuitous and we set a date to propose the idea to the students

.

Each of the partners came to our classroom to present a problem, a solution to the problem, and why they are passionate about their work. After each presentation, students recorded their learnings and reflections in their student journals and then we shared aloud our reflections at our daily class circle. We did a class vote and the majority of the students voted that they would like to work with all 3 organizations.

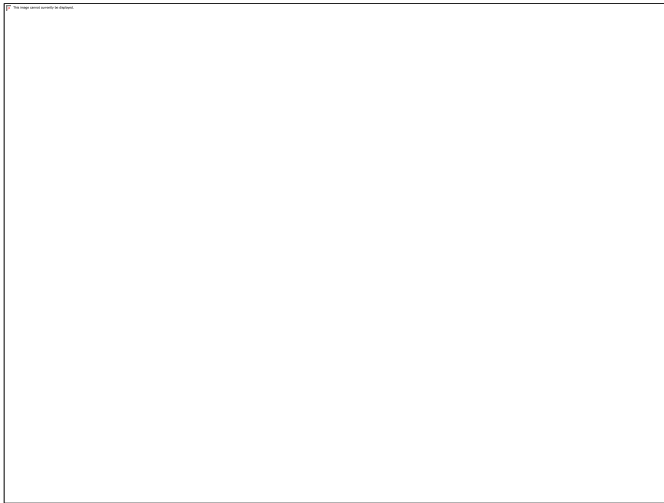


Figure 1. Storm drain presentation

### Stage Three: Action

During stage 3, students carry out their action plan and experience real-world results through collaboration. The spreading of native prairie seed took place on a chilly spring morning. It was a two mile round trip walk from the school. A few of the students were inadequately dressed and decided to go back early with a volunteer before spreading the seeds. The rest of the students formed a line and walked as a group slowly scattering a mixture of sawdust and seed.

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Figure 2. (above) Foster Prairie Restoration Project

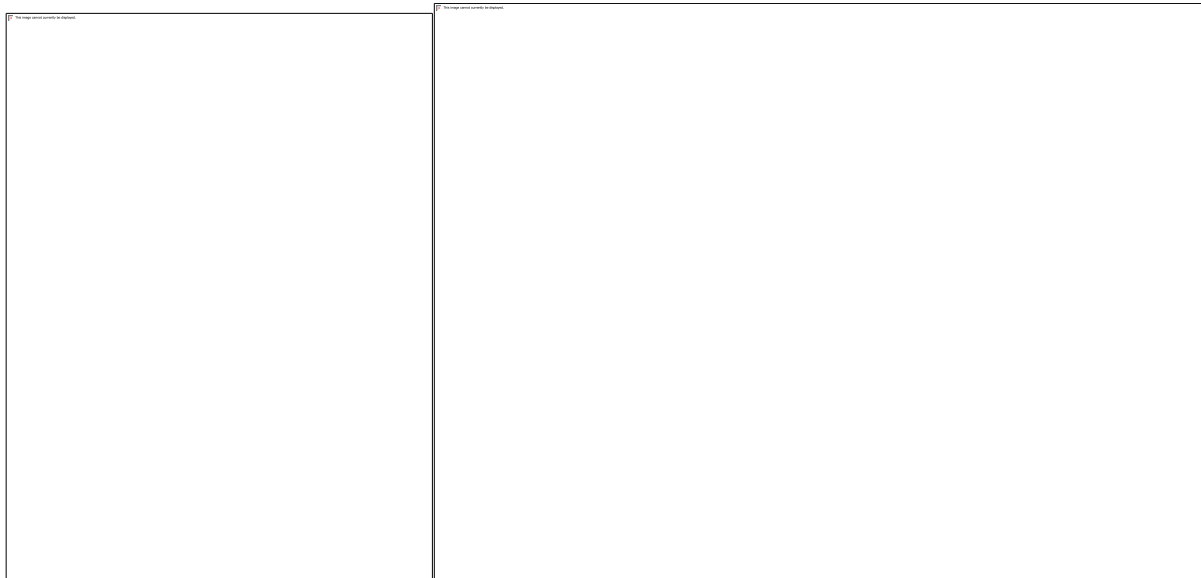


Figure 3. Herb garden project

Figure 4. Weeding, digging, and mulching at Heritage Park.

For the community garden project with Habitat for Humanity, Kayla taught students how to plant the seeds and gave instructions for their care in our classroom. The student planted approximately 100 cups

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of cilantro, oregano, parsley, garlic chives, and spearmint. On a daily basis, a student was in charge of watering and on a weekly basis a group of students measured the herbs' growth.

The city garden project was the most recent service project. The City employees had 18 different plants to install at Heritage Park. Students connected the information about the different plants to their knowledge of native prairie plants, "Hey, Joe Pye Weed is on the Zap board! That's a native plant! That's super good for the soil!"

### Stage Four: Reflection

The reflection process was a vital stage because it is where the community-service projects became service-learning projects. Students could reflect on our service by talking, writing, or drawing in their Jeffers Journal and using the service-learning reflection templates. This was also the stage where students had more opportunity to practice choice and come up with their own ways of recording their learning.

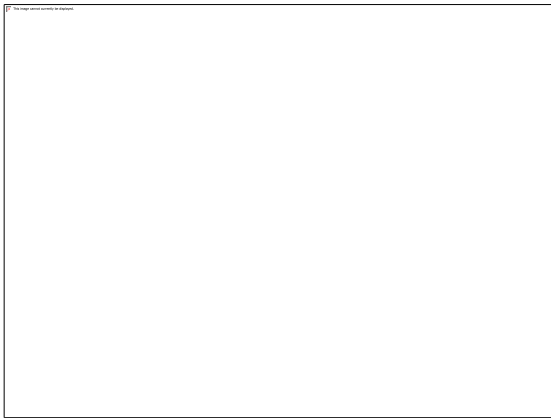
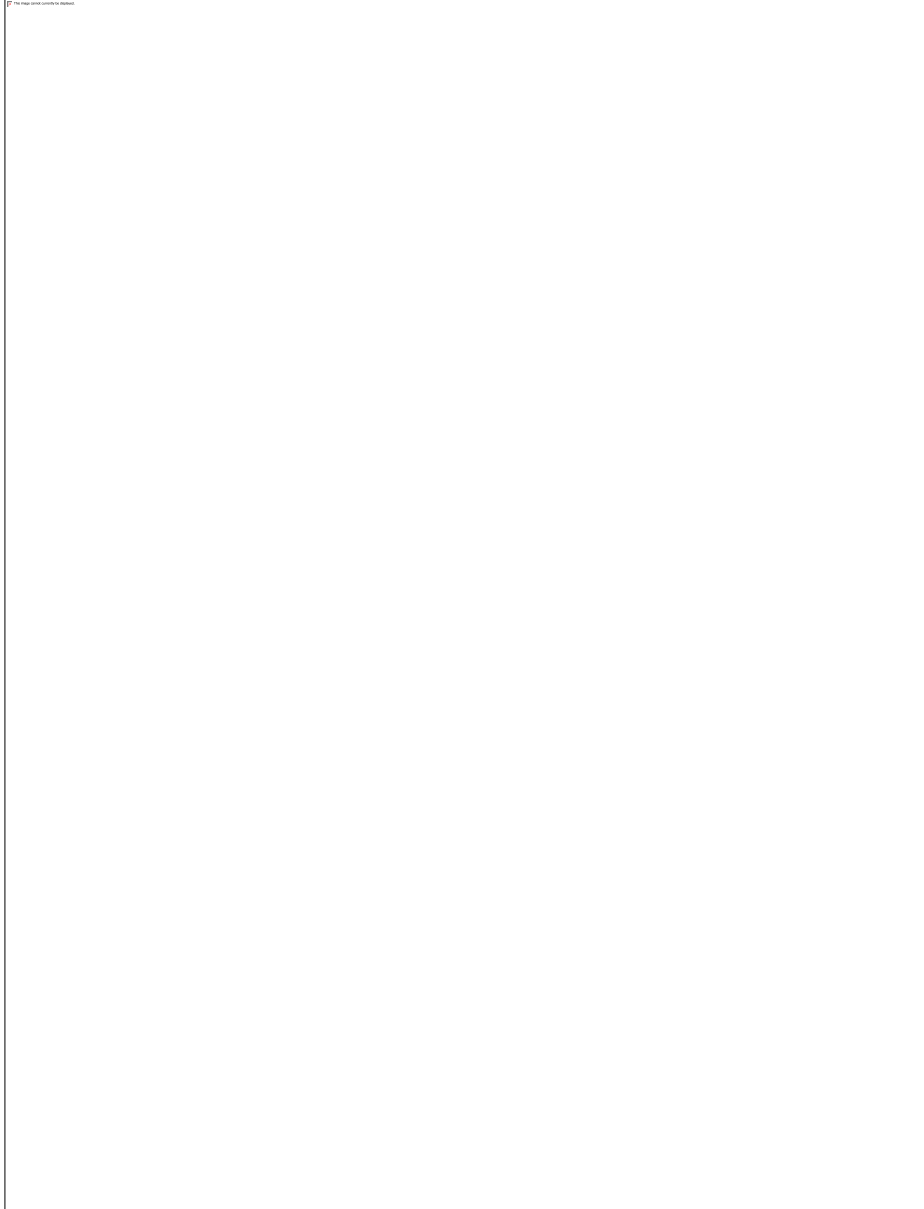


Figure 5: Students using kwl charts



Figure 6. Students presenting self-chosen report.



Student's work showing sequence of events on the prairie restoration service project. (Dictated by student).

1. *We are planting native plants like Indian grass and Blood Root.*
2. *Buck Horn is an invasive plant and takes up all the room.*
3. *The oak trees need to be spread out far or they will get all crowded and no plants will grow underneath.*

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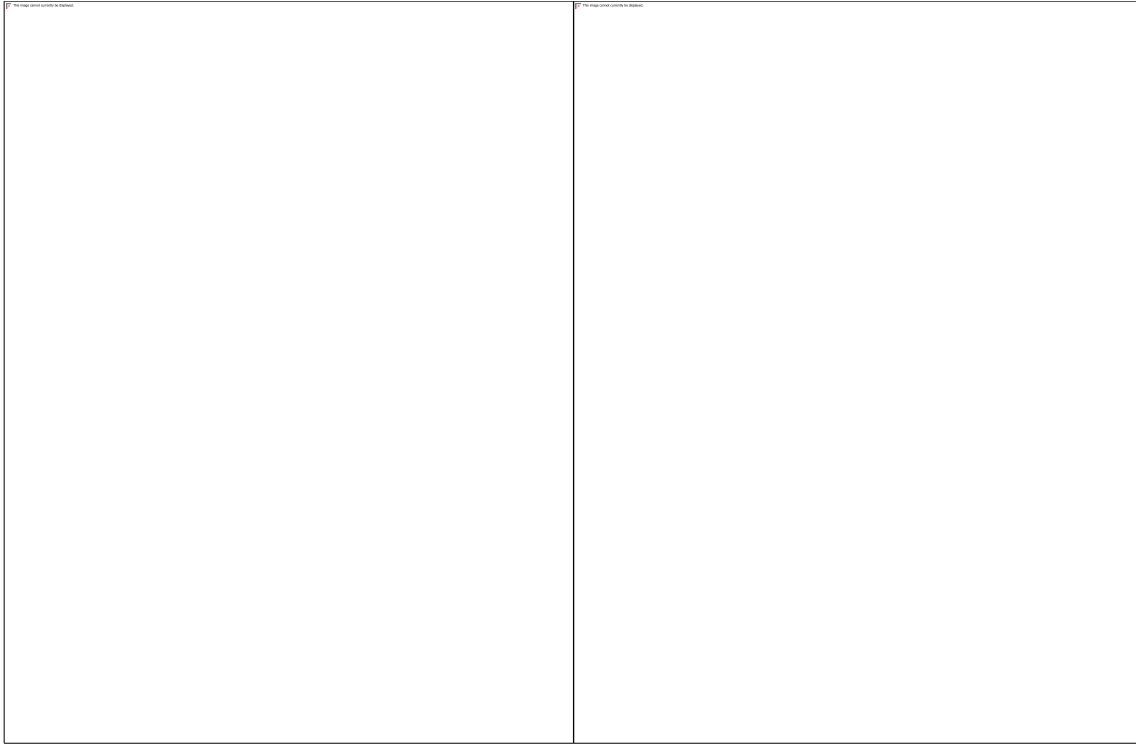


Figure 7. (above) Student work samples of connecting Virtues Project with service-learning.



Figure 8. (Above) Students in the field using Jeffers Journals.

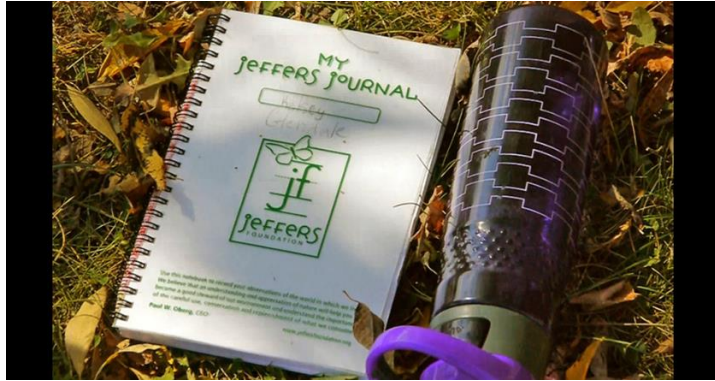


Figure 9. Student Jeffers Journal

### Stage Five: Demonstration

Students choose to show: What they learned, the needs they have addressed and the impact they have had. Leadership and decision-making played a crucial part in the demonstration process. To help us reflect on ways to demonstrate, we used the “Documentations Idea” template (see figure below). I met with students in small groups at the presentation table and student led reading aloud the different choices. All 20 students participated in filling out this form. Although some students during the action process did not sustain interest, they were intrinsically motivated to express the ways they wanted to demonstrate their learning. Some of their ideas were not implemented at the time this action research study was written. Below are the students’ ideas that were implemented:

1. Prairie root collaborative art project
2. Native Plant Zap Board demonstration
3. Perseverance Virtue all-school assembly slide show
4. The Circle of the Prairie play



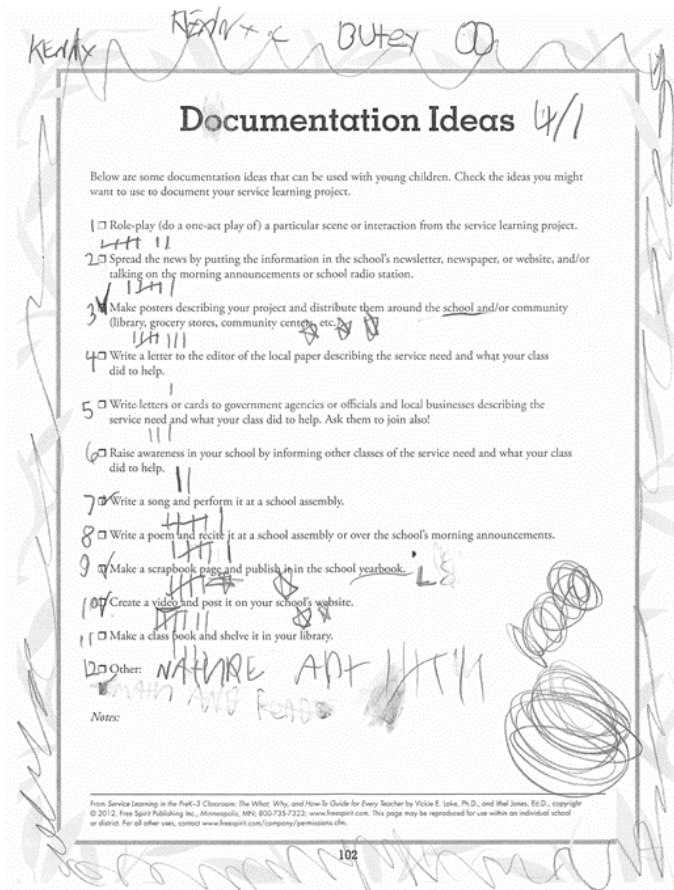


Figure 10: Documentation Ideas



Figure 11. (Above) Perseverance Slide show

Figure 12. (Left) Native Plant Zap Board in action

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All 20 students requested to demonstrate the zap board lent to us by the Prairie Enthusiasts to other students. 16 of the 20 students chose to create a slide show connecting our service-learning experience to our character education curriculum, the Virtues Project. The students wrote the script, chose the photographs, and typed the text needed. They wrote down their parts for the slide show in their student journals. I recorded the slideshow on an iPad. When it came time for the all school assembly, the project was completed and shared with the rest of the school.

### Results

After the service projects and demonstrations were completed, I gathered my observation notes, student journals, taped interviews, and the service-learning reflection charts to analyze the results. I also gave the following survey to all twenty students as the final piece of evidence. This survey was taken from the Wisconsin Department of Public Instruction's report, *Sustaining Service-Learning in Wisconsin*. (WI DPI, 2001). In order to get more in-depth information on their responses, students met with me individually to explain their surveys.

Place an "X" in the box that best describes your experience.					
SA=Strongly Agree A=Agree D=Disagree SD=Strongly Disagree DK=Don't Know					
	SA	A	D	SD	DK
1. Taught me new and different things.	45%	50%	5%		
2. Taught me how to work with my classmates.	30%	35%	15%		20%
3. Taught me about jobs and careers.	45%	25%	15%	10%	5%

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<b>4. Allowed me to visit different places.</b>	<b>65%</b>	<b>20%</b>	<b>10%</b>		<b>5%</b>
<b>5. Allowed me to meet new people.</b>	<b>60%</b>	<b>20%</b>	<b>20%</b>		
<b>6. Helped me better understand what I study in class.</b>	<b>20%</b>	<b>50%</b>	<b>10%</b>		<b>20%</b>
<b>7. Made learning more interesting.</b>	<b>25%</b>	<b>50%</b>	<b>10%</b>		<b>15%</b>
<b>8. Made learning fun.</b>	<b>60%</b>	<b>30%</b>	<b>5%</b>		<b>5%</b>
<b>9. Encouraged me to use my own ideas.</b>	<b>25%</b>	<b>15%</b>	<b>10%</b>	<b>5%</b>	<b>45%</b>
<b>10. Encouraged me to be creative.</b>	<b>35%</b>	<b>20%</b>	<b>25%</b>	<b>15%</b>	<b>5%</b>
<b>11. Helped me see what I study is used outside of school.</b>	<b>30%</b>	<b>25%</b>	<b>15%</b>	<b>5%</b>	<b>25%</b>
<b>12. Helped me understand my community and how it works.</b>	<b>50%</b>	<b>20%</b>	<b>10%</b>	<b>10%</b>	<b>10%</b>
<b>13. Gave me confidence in myself.</b>	<b>30%</b>	<b>30%</b>	<b>30%</b>	<b>10%</b>	<b>15%</b>
<b>14. Helped me to become better at solving problems.</b>	<b>40%</b>	<b>25%</b>	<b>5%</b>	<b>5%</b>	<b>25%</b>
<b>15. Made me want to continue doing community service.</b>	<b>65%</b>	<b>25%</b>	<b>5%</b>		<b>5%</b>

**Survey data analysis**

I compiled the survey results so I could first see which areas had the strongest student response. When looking over the top five responses, I thought back to my original question: How does service-learning

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impact the learning of E1 students physically, social/emotionally, and cognitively? Below are the top 5 responses and the recurring themes I found.

1. 95% Taught me new and different things.
2. 90% Made learning fun
3. 90% Made me want to continue doing community service.
4. 85% Allowed me to visit different places
5. 80% Allowed me to meet new people.

### **Recurring themes and impacts**

#### **Cognitive impact**

##### *Taught me new and different things*

“The prairie used to be filled with Buckthorn other people got it out and burned the prairie. We didn’t burn it because that would have been dangerous but we helped and planted seeds so there would be more native plants. I know a lot of native plants now. Quite a few.”

– Brianna age 7

“There’s many ways to save water. I think it’s sad for the animals because they can get really sick from the things in their home. I feel sad when I can’t drink water. Once I saw a huge spill of oil on the road. At first I thought ‘It’s a rainbow!’. Now I think, “That’s going to a fish’s home.”

– Nell age 8

In the survey, 19 out of the 20 students mentioned they learned new concepts during the service-learning process. During interviews, the majority of students shared that they learned about the long

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roots of prairie plants and how they help hold the soil. Other students were fascinated that the city they lived in had so many storm drains. The concepts of native and invasive plants became of interest to them when they could see them for themselves on the service projects. I contribute the strong cognitive understanding to having the direct hands-on experience with what they were learning.

### **Emotional Impact**

#### *Made learning fun*

“It feels fun to be helpful –like when we cleaned the storm drain and planted more prairie plants. One more thing, planting plants is REALLY fun.” – Tom age 7

“It made learning fun because I really like to do hands-on stuff and I think service-learning did a good job helping me out with that.” Ella- age 9

The combination of action and going beyond the school walls were the top reasons students gave of why they thought service-learning was fun. Hands-on learning met Ella’s emotional needs. The kinesthetic learners in the class especially thrived during hands-on learning opportunities. Another way the service-learning project affected the students’ emotional needs is getting opportunities to be seen as competent and making a difference. Tom equated being a helper as fun.

### **Social Impact**

#### *Allowed me to meet new people.*

“It felt good to meet new people because it was very fun. I liked learning their names and who they are.” - Collin age 7

“I never knew there were Prairie Enthusiasts or that there were some people that checked over 3000 storm drains!” –Ella age 9

“It (service-learning) taught me to listen more.” – Larson age 9

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The “new” people the students met were the 4 presenters. Some children expressed that for the next service-learning project they would like to meet more people. Some children initiated to do interviews with the presenters. Having the community partners interact more than once helped establish a relationship between the children and the presenters.

I also noticed several students mentioned that they had fun learning because they were working with other people. In the Montessori classroom, children have the freedom to choose to work alone or with others. The collaborative nature of the service-learning projects and the demonstrations gave another opportunity for cooperative work and made it easier for different children to work together. When discussing why he thought service-learning was fun, nine-year-old Ben explained, “It showed me to work with my classmates- because it’s a little harder in the classroom. Service-learning made it easier because you have to work with partners.” Although there was no point in the service-learning projects that it was required to work with others, it happened naturally. When analyzing the photographs and my observation notes, I consistently saw children of mixed ages and abilities working together. As pointed out in the literature review studies, my action research also found an increase in teamwork and a sense of cooperation.

### **Physical Impact**

*Allowed me to visit different places.*

“I like to do the doing. It’s fun and you’re helping- plus you get to go somewhere you probably wouldn’t go because you didn’t know. It makes me want to go there again with my mom.” Nathan age 8

“We didn’t just sit down and talk- we actually got to go somewhere so we can do something more than just know about it.” Joe, age 9

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The act of walking to the service sites gave students opportunities to use their muscles and be physically active. Students also regularly involved their senses to do the service-learning: removing weeds and digging holes with their hands, measuring herb heights, touching leaf shapes, smelling soil. These physical acts created deeper cognitive understanding. As the saying goes, “I hear, I forget. I see, I remember. I do, I understand.”

*Service learning made me want to continue doing community service.*

“The best part was planting plants to make the world look better. I’m going to do that again.”-Adam-age 7

In my literature review- a main rationale for introducing service-learning in the early elementary years is that it is a prime time to strike the imagination of young children and lay the foundation of children seeing themselves as problem solvers and connected to the greater community.

Most children were unaware a prairie was situated so close to the school. The Prairie Enthusiasts were encouraged to hear the children tell them they planned on sharing about the prairie with their families. As mentioned earlier, most of the volunteer work needed to be done on the prairie is dangerous for young children. The way in which the children helped the Prairie Enthusiasts’ mission besides native seed planting was by promoting the preservation of the prairie.

### **Discussion**

#### **Analysis of 5 stage Implementation**

Can the process of investigation, planning, action, reflection and demonstration in service-learning be successfully implemented as an authentic learning experience for E1 students?

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In the past, I have witnessed and participated in community service at my school site from creating decorations for the local Martin Luther King Jr. community breakfast to Jump for Heart fundraisers. As a kitchen coordinator at a homeless shelter and youth activity coordinator in a farmworker community, I facilitated service-learning opportunities for high school and college students. I had never participated in a service-learning experience for primary elementary students connected to the academic curriculum. This action research project afforded me the opportunity to lead a service-learning program using the five stages of service-learning as a framework.

Reflecting back on each of the stages, I had the most uncertainty with the first stage of investigation. In my literature review, other service-learning practitioners also found incorporating student voice challenging. I knew student ownership would increase their buy-in and that my role as facilitator instead of transmitter of knowledge and decision maker would make our service-learning experience more authentic. From studying other service-learning

Reflection through out every part of the stage was also difficult to make sure I built enough time in for reflection during their service. Several students had self-motivation to take notes and enjoyed writing in their journals. For other students, writing in general is an overwhelming task they do not choose on their own.

### **Impact on teacher**

How did participation in service-learning impact child/teacher perception of the school experience?

As pointed out in student evidence, the majority of the children's perception about service-learning is that it helped them learn new things in a fun way and that they would want to learn that way again. How did service-learning impact teacher's school experience? My intention in doing action research was to put aspects of Montessori theory into practice and develop skills such as networking and curriculum integration. I felt my need for collaboration and my leadership skills were greatly enhanced. The following are the positive effects of the service-learning project on me as a professional:

1. Made 3 new partnerships with community organizations
2. Collaborated with local principal, university professor, & city officials



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3. Wrote first grant proposal
4. Promoted interest in service-learning among staff
5. Synthesized environmental education and Montessori botany curriculum
6. Increased ability to integrate art into students' school experience

The service-learning project energized me when I saw my students learn with enthusiasm and identify themselves as helpers that intend to continue in service and promote it to others. As the students gained confidence in themselves as agents of change, I also gained confidence as an educator who could affect positive change in my classroom and school.

### **Implications for Future Action**

#### **Future classroom implementation:**

##### Increase opportunity for student voice

For my first service-learning project, I took a scaffold approach to including students' voice in the service-learning process. In the investigation stage, I did the contacting of outside community members and then presented those partnership ideas to the students. When we were brainstorming ideas for service, students came up with ideas for service within our own school (Create mural, repair hallways and ceiling tiles, beautify landscape, etc.). Due to time restraints and resistance from building staff, we had all our service-learning projects out in the community rather than at our school. In the area of identifying the problem and selecting the idea, I chose a partnership with willing community members. In the stages of preparing and implementing, the community partners shared the areas of need and students chose from that list. In the reflection stage students voiced how they would best like to reflect on their learning through illustrations, use of journaling, and doing interviews. In the Demonstration stage, students also had a wide variety of choices they came up with and participated in as many or as little as they chose. In the future, I intend to incorporate more student voice in the investigating and preparing stages of service-learning.

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### Integration with more subjects

My past participation in habitat restoration in California working with the Return to the Natives, my recent summer professional development with the Mississippi River Institute, and a graduate course on E1 Montessori Botany and Zoology steered me towards the theme of environmental education. I did use some literature to introduce the concept of service. Throughout the action research and literature review process, I discovered many more resources for excellent children's literature.

I observed that the majority of the students were motivated to create graphs and pictures of their measurements. I had not realized that many were unfamiliar with how to record tally marks. There are many opportunities for me to connect the math standards in data and measurement to service-learning.

I see great potential for integrating Service-Learning with the Montessori Cosmic Education Fundamental Needs of Humans. Through our investigations of storm water-run off, the need for clean water was discussed briefly and some students reflected on the fundamental needs of living things in the prairie (space to grow, healthy soil, etc.). The connection can be made more explicitly by investigating fundamental needs specifically for humans around the globe and in the local community. In my literature review, one study successfully integrated their culture unit of Africa with the fundamental need for power and learned about solar panels as a solution to power a hospital in Gambia.

### Project involving serving people

Some of the literature I reviewed gave examples of student's growing in empathy due to their interactions with the people they were serving. Since our projects revolved around stewardship of the land, we did not have opportunities for students to interact with different populations. In the future, I intend to create the space for the children to have that as a choice also.

### Parent involvement

I started slowly by including 1 parent in the service-learning projects. For future projects, I would start the school-year by sharing service-learning as an ongoing theme throughout the year and ask how they would like to be involved. One of the highlights for the children was working and getting to know other adults.

### Use of local Middle School, High School and University students

After reading the studies of collaborations between university service-learning participants and elementary students and my own experience in service-learning as an undergraduate, I was enthusiastic to establish ties with the local university. I was at first disappointed at discovering that currently there is not an existing service-learning program implemented. Through my research, I made contact with a university professor who had been directly involved in a Learn and Serve grant as project consultant where she connected university students to local middle schools in service-learning. She met with me for an interview and shared possibilities to make connections with individual professors who may be interested in a service-learning collaboration.

### Future school-wide implementation

Recent support for initiating service-learning at our school was shown by the Building Leadership Team when they announced service-learning would be an area of focus for the 2016-2017 school year. The Peace Education Committee is intending to plan ways to connect service-learning to our outdoor education project through collaborative art projects such as a Peace Path and a Peace Pole. The Student Council is interested in having students practice student-centered decision-making and having them lead stewardship projects that they think of themselves.

### **Conclusion**

Through analyzing the observations, field notes, interviews, student journals and surveys throughout the duration of the service-learning action research, I found service-learning can provide a practical framework for connecting lower elementary students to their local community in a meaningful way while addressing real community needs. The K-12 Service-Learning Standards for Quality Practice most exemplified in this study were the standards of meaningful service, ongoing reflection, intentional link to curriculum, and cooperative partnerships. More research is needed to understand how the standards of student voice, duration, and diversity can be successfully implemented in the primary elementary setting.

By successfully initiating service-learning in one E1 classroom and creating positive partnerships with 3 local community partners, this study sets the stage for school-wide implementation.

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