

Service-Learning in Teacher  
Education: Does the Model Matter?

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Abstract

The purpose of this qualitative study was to gain an understanding of the sense freshmen elementary education majors made of their service-learning experiences in their teacher education courses. Data were gathered from six majors over two semesters, three who engaged in a regular model of service-learning and three in a cascading model. Findings indicated that the service-learning experiences reinforced the majors' learning of course content and suggest that the type of service-learning model has an impact on the quality and depth of sense making and understanding of education on the part of future teachers.

In their call for more integrated and coherent designs for teacher education programs, Darling-Hammond, Grossman, Hammerness, Rust, and Shulman (2005) suggest that teacher education programs should make effective connections among courses and stronger links between clinical experiences and formal coursework. When provided early and throughout the program, they argue, clinical experiences allow learners to develop conceptual frameworks that assist them in organizing, conceptualizing, and better understanding the theories and ideas presented in their academic work. The authors claim that students who have some experience with teaching, including clinical experiences, are

more prepared to make sense of their academic work and that the academic theories and ideas can in turn help them make sense of experiences and observations.

To advance our understanding of the effectiveness of this integration of academic work and clinical experiences such as service-learning, this study collected and analyzed in-depth qualitative data from six freshman elementary education majors to examine the sense they made of their service-learning experiences as part of their first-year teacher education courses. Although most of the students in the instructor/researcher's previous courses had quantitatively indicated that their service-learning experiences had helped them learn the course content, this study was undertaken to gain greater insight into this process.

This study adopted a constructivist perspective by attempting to focus on the meaning participants made through an active, social construction of knowledge, rather than recall of information (Brooks & Brooks, 1993). The primary research question driving this study was, what sense did freshman elementary education majors make of their service-learning experiences in their teacher education courses? Because the participants in the study engaged in two different models of service-learning, the data analysis also examined similarities and differences in the sense-making of the participants in the two models, which is the primary focus of this article.

Theoretical Perspective

The theoretical perspective for this study draws from a framework developed around Dewey's (1940) ideas on experience in education, Aristotle's (Ozman & Craver, 1990) view of reasoning, Piaget (1970) and

Bransford, Brown, and Cocking's (2000) descriptions of constructivism, and Shulman's (1999) scholarship of teaching. The acquisition of knowledge—how we come to know—is the central concern of this study and a theme common to these four views.

According to Dewey (1944), experience is an essential element of education. The acquisition of knowledge occurs when both the body and the mind work together for meaningful learning. Aristotle also holds that the body and mind work together, utilizing inductive and deductive reasoning processes, to acquire knowledge (Ozman & Craver, 1990). For both Dewey and Aristotle, the process of acquiring knowledge is similar: the body receives data through sensory perception and the mind organizes this sensory data into generalizations, which in turn become particulars for new generalizations. Contemporary theories of constructivism are consistent with these earlier perspectives. Constructivism describes the assimilation and accommodation of new information into existing schema of prior knowledge to construct new knowledge (Bransford et al., 2000; Brooks & Brooks, 1993; Piaget, 1970; Shulman, 1999).

#### Related Literature

For this study, service-learning was defined, in accordance with the National Commission on Service-Learning (2002), as “a teaching and learning approach that integrates community service with academic study to enrich learning, teach civic responsibility, and strengthen communities.”

Much of the literature that attests to the educational efficacy of service-learning can be organized into four types of outcomes: academic, professional,

personal, and social. Some primary academic outcomes of service learning claimed by researchers include enhanced GPA and writing skills (Astin & Sax, 1998; Vogelgesang & Astin, 2000), critical thinking (Eyler & Giles, 2002; Vogelgesang & Astin, 2000), knowledge acquisition (Astin & Sax, 1998; Hart & King, 2007), understanding of content (Eyler & Giles, 2002; Kirtman, 2008; Tannenbaum & Barrett, 2005), knowledge application (Abourezk & Patterson, 2003; Michael, 2005; Wasserman, 2009), theory-to-practice connections (Brown, 2005; Dodd & Lilly, 2000; Wade, 1995), pedagogical knowledge (Cox-Petersen, Spencer, & Crawford, 2005; Shakir, 2003), and transformed perspectives on teaching (Malone, Jones, & Stallings, 2002; Shakir, 2003).

Professional outcomes of service-learning experiences found in the research include using service-learning in the participant's own classroom (Wade, Anderson, Yarbrough, Pickeral, Erickson, & Kromer, 1999), valuing service-learning (Wade, 1995), being a change agent (Root, Callahan, & Sepanski, 2002), making sense of students' behavior (Shakir, 2003), gaining confidence in teaching (Cox-Petersen et al., 2005; Novak, Murray, Scheuermann & Curran, 2009), achievement of professional development goals (Miller, Dunlap, & Gonzales, 2007), planning and teaching collaboratively (Brown, 2005), gaining insight into school politics (Brown, 2005), and gaining leadership skills (Abourezk & Patterson, 2003).

Personal outcomes claimed in the literature include increases in self-confidence (Astin & Sax, 1998; Astin, Vogelgesang, Ikeda, & Yee, 2000), self-awareness and sense of worth (Astin et al., 2000; Cox-Petersen et al., 2005; Dodd & Lilly, 2000; Furco, 2002; Malone et al.,

2002), sense of making a difference in the world (Astin et al., 2000; Carlan & Rubin, 2005; Wade, 2003), and awareness of others and the world (Astin et al., 2000; Carlan & Rubin, 2005; Frank & Lee, 2005; Furco, 2002; Malone et al., 2002; Miller & Gonzales, 2010).

The social outcomes described by researchers include increases in commitment to helping others (Astin & Sax, 1998; Fenzel & Leary, 1997), cultural sensitivity (Boyle-Baise, 2005; Brown & Howard, 2005), cross-cultural communication skills (Boyle-Baise & Kilbane, 2000; Brown, 2005; Frank & Lee, 2005), relationship building (Jones & Hill, 2001), value of student collaboration (Lambright & Lu, 2009), awareness of social justice issues (Baldwin & Buchanan, 2007; Brown, 2005; Carlan & Rubin, 2005), informed and democratic citizens (Astin & Sax, 1998; Astin et al., 2000; Vogelgesang & Astin, 2000), and contributions to and responsibility for community (Cox-Petersen et al., 2005; Shakir, 2003; Wade, 1995).

#### Methodology

This study on service-learning in teacher education was an in-depth qualitative study using grounded theory methodology. The purpose of this study, better understanding how freshman elementary education majors made sense of their teacher education service-learning experiences, invited the use of this interpretive method, which is described by Erickson (1986) as being appropriate for a study attempting to learn more about “the meaning-perspectives of the particular actors in the particular events” (p. 121). Shulman (1986) similarly describes this type of study as focused on “discovering the meanings constructed by the participants as they attempt to make sense of the

circumstances they both encounter and create” (p. 8).

The collected data were analyzed by the techniques and procedures of grounded theory as described by Strauss and Corbin (1998). This method involves the interplay between the researcher and data in which findings are systematically and inductively derived from data from the ground up. As the data are read and analyzed, the researcher assigns codes reflecting ideas and themes that emerge, which are then grouped together into larger categories that are integrated so as to develop more general assertions and principles that form the findings of the research.

#### *Research Design*

In addition to investigating the sense freshmen elementary education majors made of their service-learning experiences, this study also differentiated between two different models of service-learning commonly used in service-learning programs: regular and cascading. As defined for this study, the “regular” model of service-learning involved the elementary education majors in a service-learning project that met a need that was identified by the school community (in this case, the elementary school administration or individual classroom teachers). Some examples include tutoring, assisting with classroom administrative tasks, and assisting with classroom management and instruction.

In the second, “cascading” model, the elementary education majors planned and implemented a service-learning project *with* the elementary students. This model thus moved beyond the regular model of meeting a need identified by school staff. Instead, the pre-service teachers and the students together identified a community

need and worked together to design a plan to meet that need. In the cascading model, the elementary students, instead of being the sole recipients of the college majors' service, as in the regular model, became part of the process for providing the service, even as they also had their academic needs met. Typical examples might include renovating and/or cleaning up the playground area, doing research on a topic relevant to the elementary classroom curriculum and then involving the elementary students in preparing and implementing a lesson on that topic to a lower-level class, or planning a party or letter-writing project for senior citizens.

With one exception, the literature currently does not include studies comparing the regular and cascading models of service-learning, but a definition of a cascading model is offered by the Community, Higher Education, and School Partnerships (CHESP). The CHESP report (Brandeis University, 2003) defines a cascading model of service-learning as including a higher education partner that typically provides service-learning to a K-12 partner who provides service-learning either to younger K-12 students or to a community-based organization. This partnership developed cascading service-learning programs offered in Florida and Pennsylvania. Other programs also describe cascading models (Florida Learn and Serve, 2006-2007; Southern Regional Institute, 2010), although none had conducted research studies into their effectiveness. The exception is an early childhood education study by Lake & Jones (2008) that described the study of a cascading model of service-learning, but did not discuss a regular model.

### *Setting*

This study was conducted with students enrolled in the two first-year elementary education courses at Loyola University, a Jesuit liberal arts university in Baltimore, Maryland. The college's mission includes a focus on service with a goal to produce "men and women for and with others." At the time of this study, there were about 3,400 undergraduate students at the college, and about 130 in the elementary education program.

The service-learning projects took place at Granger (pseudonym) Elementary/Middle School, an urban school in which the vast majority of students and staff and more than half of the faculty was African American. Granger students typically came from the underprivileged neighborhoods that bordered the middle- and upper-middle-income homes that make up the community surrounding Loyola University. In contrast, the large majority of the mostly white Loyola University elementary education majors came from middle- and upper-middle-class families, with a large concentration coming from the Northeastern states, a smaller number from the Middle Atlantic states, and a few from various other states. For most, this was their first experience in an urban school setting.

### *Participants*

All students in the two sections of the fall semester Introduction to Education course completed a questionnaire that collected demographic information and asked questions related to the students' earlier experiences with service-learning, teaching, and learning. Freshmen students in the fall course who agreed to also take the Learning Theory course the following spring semester and believed that they

wanted to be an elementary school teacher were eligible for participation in this study. Based on their questionnaire responses, six participants were selected for this in-depth research. All participants were college freshman over the age of eighteen who had no prior service-learning experiences and were selected to also provide diversity in ethnicity and in the type of school previously attended (public or private). Three of the selected students were enrolled in the Introduction to Education section that included a cascading service-learning model, and three were from the section that included the regular service-learning model. See Table 1 for participant information. The cascading project that was chosen by the majors and students for the fall semester in this study was an exercise video. The college majors taught muscles and exercises to the fifth graders as part of their physical education curriculum, and the fifth graders created a video talking about the muscles and demonstrating exercises. The fifth graders then taught a second grade physical education class about the muscles and exercises using the video and live demonstrations. The physical education teacher continued to use the video for other classes.

The cascading project conducted during the second semester was a letter-writing campaign, based on a connection that someone in the school had to a soldier serving in Iraq. The majors taught a geography lesson on the Middle East and a letter-writing lesson to a second grade class and assisted them as they wrote letters to soldiers. The majors and students then visited the other classrooms in the school, where the second graders shared information on Iraq and the war and invited the other classes to write letters to cheer up the soldiers. After the deadline, the

Table 1

Regular Model Majors			
	Cindi	Tammy	Mary
Age	19	18	18
Race	African-American	White	White
High School	Public	Private	Private
State	New Jersey	New Hampshire	Pennsylvania
Cascading Model Majors			
	Nina	Deb	Julie
Age	18	18	19
Race	White	White	White
High School	Public	Public	Private
State	Connecticut	New Jersey	Pennsylvania

letters were collected and sent to Iraq.

The regular model projects that were identified by school personnel and conducted by the majors included tutoring, planning and teaching lessons, working with groups of elementary students, grading, recording information, filing papers, designing and displaying bulletin boards, constructing instructional aids, and organizing elementary students and materials. (For clarity, hereafter the college elementary education majors are referred to as *majors* and the elementary school students are referred to as *students*.)

#### *Data Collection and Analysis*

The data sources for this study included both a series of in-depth interviews and several written assignments. The interviews were conducted after the six participants were selected and agreed to participate early in the first semester, at semester mid-point and the end of the first semester, and at the mid-point and end of the second semester. The first interview

protocol asked participants to explain their understanding of learning, the role of teachers, and service-learning and to discuss both a positive and a difficult previous learning experience. The subsequent interviews asked participants how their thinking about learning, teaching, and service-learning had changed since the previous interview, to describe a service-learning experience, and to discuss both what they had learned and what challenges they had faced and how they had dealt with them. Each interview took 30-40 minutes and was later transcribed. The written data sources included weekly field forms and reflections, the initial questionnaire and an end-of-term questionnaire (all the questions in the initial questionnaire plus a few more), midterm exams, final reflections, and concept organizers. In order to establish credibility and avoid bias, interviews, questionnaires and course documents were used to provide a methodological triangulation of the data (Denzin, 1978).

As mentioned above, data were analyzed in an inductive process from the ground up as suggested by Strauss & Corbin (1998). The researcher, who also taught both sections of the teacher-education course each semester, read all the documents during the semester as course assignments and coded those of the participants as each was turned in. The interview transcripts were read and coded at the conclusion of the second course.

The researcher first read through and coded the data from each of the six participants in turn, looking for major themes and ideas about their service-learning experiences that emerged from their responses and synthesizing those into categories for each participant. Once that was done for each of the individual

participants, the researcher then began to look for similarities, links, and connections among the participants. When complete, eleven different categories of responses had emerged: cascade, collaborate, community, connect, course content, making a difference, meeting needs, planning/working together, reflection, urban schools/different background, and two-way. After further analysis, these categories were organized into four main themes: Collaboration, Reciprocity, Connections, and Diversity. Finally, the data were then examined for similarities and differences between those participants who were engaged in the regular service model and those in the cascading model.

#### *Limitations*

This study was conducted at a Catholic, liberal arts college with majors from middle and upper middle class families. Their experiences of a service-learning project in an urban elementary school may differ from those who have more diverse backgrounds.

The researcher for this study was also the instructor for the service-learning courses discussed here. The lens through which I was looking at the data may be different from that used by a researcher who has not experienced service-learning as an instructor. I also used multiple sources for a methodological triangulation of the data to minimize the effects of researcher bias.

At the time of this study, Loyola University had four service-learning courses in the teacher education program and the courses studied here were the initial two for the program. While the meanings constructed by participants in this study are presented in the findings, these meanings may not have lasted beyond the boundaries

of this study, and may have changed since participants encountered at least two more courses in the program with service-learning components .

### Findings

As reported in more detail elsewhere (Castellan, 2006), the findings of this study indicate that all of the majors reported gaining valuable benefits from their service-learning experiences and made sense of their service-learning projects by recognizing that those projects offered them the opportunity to establish relationships. Data indicated that collaboration happened as majors engaged in a reciprocal relationship while making connections within a diverse context. In terms of the differences between regular and cascading majors' perspectives on service-learning, the data show that majors participating in the cascading model, Deb, Julie, and Nina, gained more specific and in-depth insight than did their regular model counterparts, Mary, Cindi, and Tammy. This difference emerged in three subthemes: (a) collaboration (b) learning from experience, and (d) reinforced pedagogy, each of which is discussed below.

#### *Collaboration*

Majors described and elaborated upon the collaborations they had with others throughout their service-learning experiences.

*The development of collaboration with the community.* While collaborating with the community to identify and meet community needs, majors with cascading service-learning projects reported a number of specific insights about what constitutes effective learning environments. Julie, for instance, talked about the importance of

involving, encouraging, and assigning responsibility to students:

In working with the 5<sup>th</sup> grade class, I realized an effective environment for learning was one where we encouraged our students, allowed them to share their ideas about the video and exercises, and organization in which every group had a responsibility. I tried to constantly encourage my group as they learned and performed exercises. I also encouraged my group to work together to share ideas regarding the video and exercises. Finally, I participated in the planning of the classes in which we set goals and tried to keep the exercises relevant to their lives.

Nina, for her part, recognized that classrooms are better organized and structured with assistance from collaborators:

I think that there is lots of outside involvement including us, as well as many parents and grandparents. They are in classes, correcting papers, and working with students. I feel it is important to have many people helping out, and it seems to be working. The classes with extra aides seemed more organized and structured. I'm happy and proud to be one of the people in the school making a difference.

The majors with regular projects talked about collaboration with the community in more general terms. Mary, for instance, reported that "supervisors are very concerned with outside sources helping students. I think Loyola is also an outside source that benefits children." Cindi offered an abstract connection between her project and her course learning, explaining,

“The project that we are working on at Granger most relates to the concept of collaboration that we have been learning about in class. We are actually working with the school and giving them resources that they can use and benefit from.” She added, “I see numerous connections between what we have been learning in class and what we are experiencing in the school. Our class is helping the school by collaborating with them.” Cindi did not mention any specifics about these collaborations or connections.

*The value of collaboration.* Majors with cascading projects came to a deeper recognition of the value of collaboration as they offered more details and descriptions of their collaborations with peers while planning and doing a service project together. They learned that they had to all be on the same page and in agreement on how to proceed if they wanted to work productively with the elementary students. The majors in this group had about an hour before each fifth grade gym class to chose, plan, implement, and evaluate their service-learning project. On the third week of the project, the gym class was cancelled because the elementary students were going to an assembly, so the majors took that time to plan. Julie reported that “we spent over an hour planning and came up with the idea that we could do a video journal that the 5<sup>th</sup> graders could share with other classes. I felt relieved and excited that we have a plan and I think the kids will be excited.” Deb talked about the specific tasks accomplished during one planning session toward the end of the semester as the majors focused on getting good footage for the video. She explained that during their preparation time, “we were making poster boards for the intro, designing the fronts of the t-shirts for the groups to have on in the

video, as well as set up a layout for how the taping will occur. It really was our most productive prep time we ever had.” Nina also seemed to embrace this collaboration:

One of the most essential parts of our service-learning is the planning stage that occurs prior to class. I have actively taken part in decision making for the classes and I have really enjoyed it. I like the collaboration of all the class adding ideas and input for the final project. Last class, for example, Jenna suggested that we change the kids’ service project to an exercise video. That is an awesome idea. I don’t think that I would have thought of that idea alone. However, with all of us working together, we molded and shaped the idea until it reached a level where we were all excited and eager to get going on the project. One of the three main aspects of child in context, which we have discussed thus far, is collaboration.

The need to collaborate, and hence the value of collaboration, did not seem as strong for the regular majors. While Mary valued having time to reflect on service-learning experiences with her peers, the regular projects did not include a strong need to collaborate in order to participate in service-learning. See Table 2 for a synthesis of these findings on Collaboration.

#### *Learning from Experience*

Learning from experience emerged for the cascading majors as they developed more insightful teaching principles, reported the more active nature of learning from experience, experienced layered reciprocity, and described possible service-learning projects, each of which is discussed below.



Table 2

Collaboration		
Themes	Cascading Model Majors	Regular Model Majors
Development of Collaboration with Community	Offered specific insights about effective learning environments	Offered general terms used to describe collaboration with community
Value of Collaboration	Offered a deeper recognition of value of collaboration because they had to collaborate with peers and community in order to plan for a cascading model project	Not a strong recognition of the value of collaboration because the regular model projects did not include a strong need to collaborate

*Teaching principles.* Cascading majors offered more specific insights than regular majors when describing the teaching principles that developed during their service experiences in an urban setting. Deb reported coming to recognize when a child was in trouble:

I want to compare my book smarts and my own experience and bring that to my classroom. I have to remember that not all kids have come from the same background that I have and realize that if they are not responding the way I think that they should to a particular situation that should be a warning signal to look a little deeper into their life.

Nina talked about issues that should be taken into account when writing up lesson plans:

An additional thing I learned through the use of organizers and

service-learning deals with the location of the school. It is an urban school and the backgrounds of the kids are diverse and poverty is definitely an issue. Again, these are things that need to be taken into account when thinking about lessons.

She also addressed learning styles, noting that “teachers must understand that people come from diverse backgrounds and everyone learns in a different way.” Nina made connections between her service-learning work with students and what she had learned in class about both Dewey and Social Reconstructionism as she discussed her efforts to find her own philosophy of teaching:

Learning about the different philosophies of teaching was interesting, and I could see that mine would probably be a combination of all of them. I want my students to learn through doing, but at the same time, I want my students to develop a sense of social responsibility.

Julie explained that a teacher should be aware of changes that might interrupt the educational process, saying that “service-learning has made me see that not all students come from stable backgrounds and even the smallest changes can disrupt a learning environment.” She also asserted that a teacher should understand his or her students well enough to maximize their learning potential:

Through this course I have realized that not every child has an easy childhood, but they must still go to school and learn. I must also be able to understand the lives of my students and still find a way to give them the best education possible.

In contrast, the majors with regular projects offered more general and abstract principles. Cindi said she had learned that teachers must connect with each student:

I have learned that children today are all different. They come from a variety of backgrounds. Economic and social status, culture, and home setting all have an effect on a student's performance in school. This has made me realize that teachers must find a way to connect with each different student. Students will learn better if they can connect with their teachers.

Mary presented a reminder she wrote for herself in her future classroom related to gender issues and disabilities: "Remember: need to teach EVERYONE; boys and girls ARE different but they can achieve just as much." Tammy believed that the teacher should provide an opportunity for each child to be successful:

I am so excited, though, to be in the school and observing how the school works and learning what works and learning what works well and what does not. Children are coming from all different living and learning styles, as a teacher, one should use every possible resource available to make sure that each child receives an equal chance to succeed.

*Active nature of learning.* When two of the majors with cascading projects described the abstract connections they were making between course content and their service-learning experiences, they used more action-oriented words to describe those experiences than the participants with regular projects. Deb observed that one does not have to be in a classroom to learn: "I know that you don't

just have to learn in a classroom environment and sometime you learn better outside the classroom." Julie made a similar point, noting, "My participation [in service-learning] brought the course content alive and made it more tangible." Both Julie and Deb talked about the connection between learning from books and from real-world action. Deb offered, "I think it is interesting to read about something in a text book and then a couple of days later see that idea/philosophy/concept in action," while Julie said that service-learning was educative because "we can see what we are learning and we can do it, and feel it, and try what we are learning in the books so it becomes real, not just words on a page." Julie also described the impact that experiences can have on making that connection: "Service-learning is a chance to put what we learn in the books into action and see it relate with what we are learning to the real world and real students and build on our experiences so every experience changes us." Deb brought another dimension into this discussion by describing the connection between content and experience in terms of how it could also enrich the classroom experience: "In class we would talk about concepts, see them in action in Granger, then talk about the relationship" again in class.

Two of the majors in the other group, Mary and Cindi, addressed the connection between course content and their service-learning experience only briefly and in more abstract and passive terms. Mary described this connection by using a powerful but ambiguous verb: "The course [Introduction to Education] forced me to connect various aspects of service-learning to the topics discussed in class." Although the word forced can have

negative connotations, in this instance her tone suggested that Mary's connotation was positive, similar to being forced to eat healthy foods when you are at a health spa—you didn't choose it, but it is a consequence of the context. Cindi offered a vague reference to content from the Learning Theory course: "Working in the classroom, I was able to experience firsthand many of the topics regarding how students learn," though she did not name the specific topics.

*Layered reciprocity.* When establishing reciprocal relationships between themselves and individuals at Granger, the majors with regular projects reported developing a connection between experience and need: they participated in service-learning *experiences* that helped meet a school *need*. The majors with cascading project added an extra layer to this equation, reporting that they had formed multiple connections between experience and need: they participated in service *experiences* to meet elementary students *needs* by involving elementary students in a service-learning *experience* to meet a further school *need*.

*Possible service-learning projects.* When asked to describe a service-learning project they might use in their future classrooms, the majors with regular projects proposed service projects that were different from their own service-learning experiences, while the majors with cascading projects described projects similar to their own experiences. When describing their service-learning project for their future classrooms, all the majors emphasized making the connection between content and experience for the elementary students. Among the regular

model majors, Tammy proposed a project that would combine science and community renewal, Cindi one that would connect learning about biology and the environment with a plant dune grass project, and Mary one that would utilize math concepts in a fourth grade to second grade buddy tutoring project. Among the majors with the cascading projects, Deb described a project that would apply writing and reading skills among second graders to a kindergarten bookmaking and reading project, Nina one that would combine learning about poverty and its effects on kids with a presentation and food drive by upper-class students to aid lower-class students, and Julie a project in which fourth grade students would use their learning about diversity to create a World of Holidays project for the community. For this assignment, the three cascading majors described a project similar to the ones they had participated in during their two semesters of service-learning experiences, which involved reaching out to other classes in the school as the elementary students served other people with their service. Among the regular participants, Tammy and Cindi described projects that involved elementary students serving the environment, which was different from their own service-learning projects in which they had directly served the students or the teacher; Mary's project was even closer in design to the cascading majors' projects, in which the service focused on others in the school. This suggests that the majors involved in cascading projects were satisfied enough with the results of their experiences that they decided to replicate them for elementary students, while the regular majors may have been looking for more productive outcomes than those produced

by projects in which they had been involved. See Table 3 for a synthesis of the findings on Learning from Experience.

*Reinforced Pedagogy*

When considering the academic outcomes, elementary students knew and understood the content they were working with so that they could teach it to others. The majors recognized the significance of how and why the students were learning. The projects provided active, hands-on methods where the students learned content well enough to teach others. This is what I refer to as reinforced pedagogy. Majors had the opportunity to teach elementary students and saw the results of their teaching rather quickly come to life in front of them. According to Deb, “The kids aren’t just learning for their own benefit, they are learning to benefit others so they’re more likely to retain it.” In her view,

Service-learning is a very useful tool to teaching students a subject, topic, or concept because the kids are learning in order to teach to others. So they feel important, kind of like they are involved in the whole teaching process, they don’t even realize all the information they are getting out of it.

Nina saw service-learning as exciting for students to share: “Service-learning gets kids enthused about learning and excited to share their new knowledge with others so it aides in the goal of getting everyone involved.” She also described service-learning as

educative because you are teaching kids something and you are teaching them to a point when they can teach someone else. So it’s not like they can kind of understand it. They need to have a strong grasp on what they

Table 3

Learning From Experience		
Themes	Cascading Model Majors	Regular Model Majors
Teaching Principles	Offered specific insights with details while developing teaching principles through experience	Offered general, abstract and less details while developing teaching principles through experience.
Active Nature of Learning	Offered more action-oriented words to describe connection between course content and experience	Described brief, passive connections between course content and experience
Layered reciprocity	Majors’ experiences to meet students’ needs through students’ experiences to meet school needs	Majors’ experiences to meet school need
Possible service-learning projects	Described projects similar to what they had experienced	Described projects different than they had experienced

are doing. If they don't they are not going to be able to explain it to someone else.

The first semester majors in the cascading group taught exercise and muscles to the elementary students and then the elementary students had to do the exercises and talk about the muscles for the video and the second grade class they later taught. Julie recognized that the fifth graders were actually trying to teach the second graders, not just mimic what the majors were doing:

I learned new exercises and new ways of dealing with kids and that if you break them into small groups with fifth graders and second graders, the fifth graders were starting to pick up and try to teach them more than just listen to us. They were trying to help the second graders.

In the second semester, these majors taught second graders about the geography of Iraq and the significance of sending letters to U.S. soldiers to second graders and then witnessed those second graders accurately describing these issues to other classes in the school as they went out soliciting letters for their letter-writing campaign. Other related lessons included how to make posters and flyers, write letters, and speak with volume and clarity for a video recording. According to Deb, "In Granger we are starting a letter-writing campaign to the men overseas. This has amazing effects: the soldiers will be happy to get these from the children, and the children can get an idea about what's going on in Iraq as well as improve their writing skills." Nina's description was so detailed and enthusiastic that it merits quoting at length:

Today we went to every classroom in the school and explained our service-learning project. I went around with four students and we talked to the younger grades about drawing pictures, writing letters, saying thank you and writing jokes. Some of the kids actually had a natural knack for being teachers. They loved the authority and really took pride in it. My service today made me proud of the kids and their accomplishments. You could really see how what they were doing was affecting them. They felt so mature and the ownership they have taken of this project is awesome. I did not think things would work out this well. I'm building strong relationships with the kid. Tramour has really opened up and gotten more involved probably because he has gotten more comfortable with us. He would make a great teacher. Erica also really enjoyed it and was the brave one to talk first and lead the way for everyone else. Today exemplified service-learning. The kids were teaching others about writing letters and the positive results this could have. This is exactly what we have been explaining to them. The way they have been learning about the war and how they explained it was perfect. They did an awesome job and showed what service-learning really is. (Nina, 3-10)

As these examples demonstrate, pedagogy was reinforced because the majors had the opportunity to assess their teaching as the elementary students demonstrated what they were taught by teaching others. When inaccurate results occurred, the majors

could assess the difficulty and try something else, a skill beneficial to future teachers. See Table 4 for a synthesis of the findings for reinforced pedagogy.

**Conclusions and Recommendations**

Elementary education majors made sense of their service-learning experiences by recognizing that service-learning offered them the opportunity to establish collaborative relationships and acknowledge the benefits of learning from experience.

*Collaborative Relationships*

Collaborating with peers and the community was a course concept and through service-learning, majors learned the difference between content as read and content as lived and learned. They collaborated with teachers and students in the urban elementary school and gained insight about collaboration. Similar to this finding, Dodd & Lilly’s (2000) study, focused on infusing service-learning into teacher education programs, found that their service-learning experiences assisted the pre-service teachers in achieving skills in collaboration with community personnel. Consistent with both of these studies, Abourezk and Patterson (2003), studying a physical education teacher education program, found that participation in service-learning had a direct impact on future teachers’ collaboration skills.

Service-learning provided majors with an understanding of what it means to collaborate with peers within an elementary school context. The majors appreciated the synergy that results from such collaborations. Cox-Peterson et al. (2005), presented similar outcomes in their study of pre-service teachers working in teams when they found that the majority of students appreciated

Table 4

Reinforced Pedagogy	
Cascading Model Majors	Regular Model Majors
Experienced Reinforced Pedagogy: majors had the opportunity to assess their teaching as the elementary students demonstrated what they were taught by teaching others	Because of the structured of this model, majors did not experience reinforced pedagogy

the peer support for planning and teaching and recognized the value of multiple ideas and different perspectives.

When considering collaboration, Dewey (1944) might suggest that the continuity of experiences of collaborating with others both takes from former and modifies future collaborative experiences. While majors learned through experience the value of collaboration, unique to this study was the finding that cascading model majors experienced more specific insights and deeper recognition of the value of collaboration.

*Learning from Experience*

Because of the experiential nature of service-learning, majors were able to relate their service-learning experiences to specific course content while making accurate generalizations and learning the content. Consistent with this, Dodd and Lilly (2000) explained that preservice teachers were able to connect literacy to the real world and Abourezk and Patterson (2003) found that physical education preservice teachers worked with supervisors in the discovery and application of subject-specific content. Cox-Peterson et al. (2005) discussed the connection of science and

literacy concepts to students' service-learning experiences while Frank and Lee (2005) saw students connect Asian history to service in a cross-cultural setting and Wade (1995) described a social studies curriculum connection to active citizenship through service-learning experiences.

Dewey's (1944) focus on thinking is consistent with the assertion that connecting content with experience can result in learning. He explains that the doing and the consequences of experience make up the matter of learning. Thinking involves accurate and deliberate connections between what is done and its consequences. Thinking not only recognizes these connections, but also takes in the details of the connections involved in experience so that thinking results in knowledge. According to Aristotle and Dewey (1944), the acquisition of knowledge requires the body and mind to work together. Through experience, the body takes in sensory input as details of particular facts. The mind reflects on these particular facts and finds connections among them resulting in the identification of a generalization. That generalization can then be used as a particular element in a new experience and the process continues as particulars and generalizations work together, through reflection, to form new knowledge.

While developing teaching principles and recognizing the connection between content and experience, the majors confirmed the assertion that new knowledge can be acquired through service-learning experiences. Cascading majors offered detailed, specific insight and more action-oriented descriptions of the knowledge acquired than did the regular model majors.

The data from this in-depth study clearly support Darling-Hammond et al.'s (2005) suggestion that an early clinical experience would offer majors the opportunity to begin building a conceptual structure of what it means to be an effective teacher by helping them make sense of the ideas, theories, and concepts of their academic coursework. The finding that these experiences reinforced the majors' learning and the deeper insights and understanding of education experienced by the majors in the cascading model indicate that the cascading model of service-learning may well be more effective for elementary education majors than the regular model. While early clinical experiences are beneficial to majors, at least in the form of service-learning as indicated in these findings, the results of this analysis suggest that the type of clinical experience also has an impact on the quality and depth of sense making and understanding of education on the part of future teachers.

Despite the limitations of this study, particularly its small sample size, the results are suggestive enough to recommend additional comparative studies of the regular and cascading models of service-learning, perhaps at institutions offering a larger and/or more diverse population of potential participants. Future exploration of the sense that community members make of service-learning as they experience it in partnership with schools of education would also be beneficial to our understanding of the efficacy and value of service-learning within elementary schools.

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