Highly Structured Service Learning: Positive Impacts on the Teacher Candidates, Cooperating Teachers, and Fourth Graders

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Abstract

This research project explored the reciprocal benefits of adding an integrated service-learning component to a required reading/language arts methods course. The undergraduate teacher candidates were immersed in classrooms at an urban, underserved school with low student performance and expected to implement a 16-hour language arts unit developed and modeled by the professor. The unit was designed to teach the undergraduates best practices in teaching comprehension and composition of expository text while simultaneously increasing the reading and writing skills of fourth grade students. Data were collected and analyzed from three constituencies: teacher candidates, cooperating teachers, and the fourth grade participants, using a qualitative approach. Findings verified that this program positively affected all populations.

Current literature calls for multiple reforms in both preservice teacher education (Darling-Hammond & Bransford, Eds., 2005) and in ongoing learning opportunities for experienced teachers (Darling-Hammond & Sykes, Eds., 1999). Current literature also calls for rigorous learning opportunities for urban students (Dilg, 2003). Zeichner (2005) in particular has called for research that simultaneously addresses positive learning outcomes for both teacher candidates and the children they are teaching. This research project showcases the reciprocal benefits that service learning can provide for teacher candidates, cooperating teachers, and elementary students. This project was initiated to help undergraduate elementary teacher candidates attending a small private university develop effective language arts pedagogies while simultaneously increasing the reading and writing proficiencies of urban fourth graders. Host teachers would be able to participate in authentic, ongoing staff development by mentoring and observing novices implement new pedagogies with their own students. Service learning was further viewed as a methodology that would allow for the implementation of many of the reforms described in the literature review. Figure One visually shows how the literature reviewed below informed this project.

Literature Review and Conceptual Framework

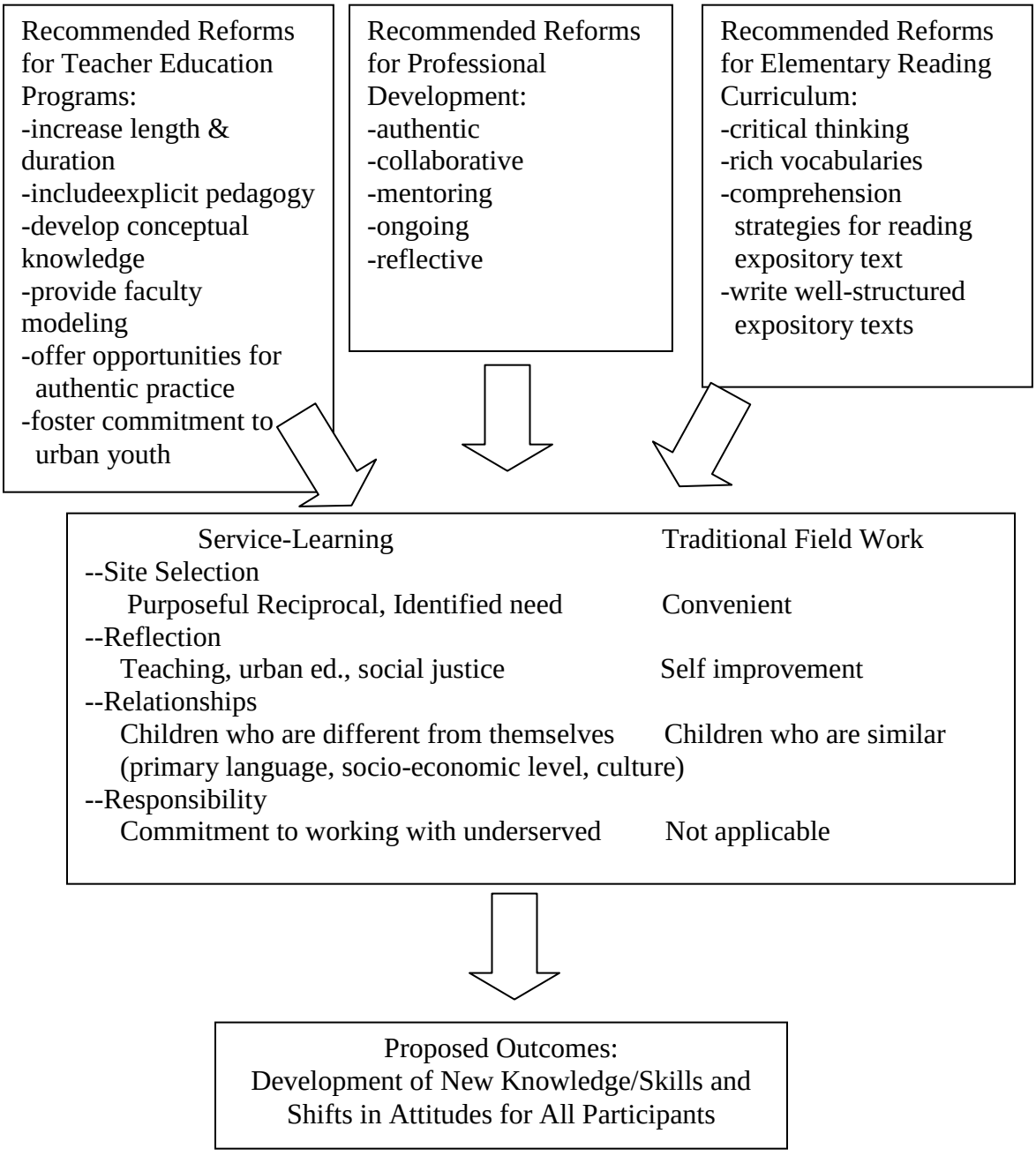
This research study is grounded in several areas of educational reform. First, the role of teacher education, at both preservice and inservice, will be briefly explored. Literacy education, particularly for urban youth, will then be reviewed. This section concludes with a review of the literature about service-learning and teacher education. Figure One visually explores how the three topics are interrelated to form the conceptual framework for this study.

Preservice Teacher Education

Traditional teacher education classes frequently do a poor job of preparing "highly qualified" teacher candidates to successfully implement curricular demands (Darling-Hammond & Bransford, Eds., 2005). Meanwhile, the Interstate New Teacher Assessment and Support Consortium (INTASC, 2008) calls for teacher education programs to produce graduates who are competent in planning learning experiences and instructing students—especially those who are typically underserved—within the various disciplines. As a result, undergraduate methodology courses are now a particular target for reform. Hence, several recommendations dominate the literature.

Figure One

Summary of Reforms found throughout the Literature



Policy makers continue to recommend that the length of reading methodology courses be increased (Graves, Pauls, & Salinger, 1996; Seely & Balock, 2001; Snow, Burns, & Griffin, 1998). Teacher candidates need in-depth opportunities to develop more kinds of conceptual knowledge and explicit teaching methods through modeling of effective, researched-based pedagogies by university faculty (Alexander & Fives, 2000) followed by increased amounts of time working in classrooms during closely supervised field experiences (Darling-Hammond & Branford , 2005). Universities also need to better prepare teacher candidates to serve highly diverse, lower performing students in urban settings (Cochran-Smith, 1999; Dilg, 2003; Smylie, Bay, & Tozer, 1999). Furthermore, teacher candidates need transformative opportunities that force them to reassess their previous conceptions about teaching and learning and closely examine the lives of children who are living in poverty (Ladson-Billing, 2009).

Inservice Teachers

Calls to reform professional development for practicing teachers are also found throughout the literature (Weiss & Pasley, 2004). No Child Left Behind (NCLB) legislation resulted in the disbursement of billions of dollars for professional development because "dollars for professional development provide us with our best bang in terms of student achievement" (Negroni, 2003, p. 6). Staff development is seen as indispensable to the application of high-quality instruction, but traditional workshops have proven to be inadequate in transforming teaching to meet today's rigorous standards and reform initiatives (Sparks and Hirsh, 1997). Effective staff development must be ongoing (Snow et al., 1998) and include opportunities for teachers to work collaboratively with others (Wenzlaff & Wieseman, 2004). Effective staff development must also contain opportunities for reflection and be offered in many different formats. Working closely with novice teachers to implement new instructional pedagogies can be an effective vehicle for staff development for both the new and the experienced teacher (Portner, Ed., 2008).

Elementary Students

Today's society requires that students become more than just fluent readers; they must be able to "think critically, create, and solve complex problems as well as to master ambitious subject matter content" (Darling-Hammond, 1999, p. 221). Students must possess extensive vocabularies to be able to comprehend and produce complex narrative and expository passages (Calfee & Patrick, 1995). Reading and writing in the content areas—particularly in science—is often problematic for youth. Expository textbooks containing complex text structures and complex terms are difficult for students to comprehend. Lack of background knowledge and ineffective comprehension strategies limit students' comprehension of expository texts; this is particularly the case for students attending urban, low performing schools (Dilg, 2003; Smylie et al., 1999) who are often racially and culturally different from the adults who teach them (Cochran-Smith, 1999). NAEP data collected across several decades has documented that students who attend urban schools continue to lag behind their more affluent peers (Kozol, 2005). Service learning, as explored below, allows teacher candidates to work closely with minority youth in the pursuit of high-quality education.

Service Learning

Teacher education faculties across the country have begun to experiment with service learning as a way of implementing educational reform (Eyler and Giles, 1994). Service-learning may be operationalized as both a teaching methodology and a philosophy that involves integrating community service with academic goals (Butin, 2005). The roots of service learning can be traced back to Dewey's (1938/1997) model of experiential education. The value of field-based experiences in teacher education

has been well documented (Goodlad, 1991) and student teaching has long been a staple of teacher education (Alvermann, 1990). These forms of experiential learning allow for a direct relationship between what university students are learning on campus and their practice working out in the real world (Fang & Ashley, 2004; Galline & Moely, 2002). Like traditional field-work, a service-learning experience allows students to "engage in community service activities with intentional academic goals" (Cress, Collier, Reitenauer & Associates, 2005, p.7). However, service learning differs from its more traditional counterpart in several key ways.

First, the experience is *reciprocal* in nature in that it benefits the community while enhancing university students' personal learning (Eyler & Giles, 1994). During a service-learning experience, teacher candidates are able to participate in an educational process that connects their service experiences directly to university coursework, while at the same time, making a reciprocal contribution to local neighborhoods and communities (Root, Anderson, Callahan, Duckenfield, Hill, Pickeral, & Wade, 1998). The most effective service-learning sites are purposely selected. Low-performing or failing schools with a majority of minority students are often the most in need of additional support (Kellehe & Farley, 2006). Involving principals and cooperating teachers in planning and designing the experience (often by selecting appropriate learning outcomes to match relevant standards) ensures reciprocal benefits for all participants. Preservice teachers are involved in the day-to-day decision making about planning, instruction, and meeting individual student needs (Anderson, 1998).

Reflection plays a critical role in developing understandings. Service-learning revolves around a cycle of experiential education. After each experience, students are provided with "opportunities for reflection that connect to their academic disciplines" (Cress, Collier, Reitenauer & Associates, 2005, p.7) within the context of their educational practices (Anderson, 1998). These connections between personal knowledge (experiences), professional knowledge, and practical knowledge (Vacca et al, 2006) allow for a deeper understanding of course content than could be achieved solely on campus (Kelleche & Farley, 2006). Reflection additionally provides opportunities for the candidates to grapple with the notion of white privilege and power (Jones, Gilbride-Brown & Gasiorski, 2005).

Service learning includes opportunities for teacher candidates to form *respectful relationships* with students who are racially and culturally different from themselves (Dilg, 2003) and diminish prejudices (Allport, 1954, 1978). Candidates leave their monocultural world and interact with those of varying backgrounds, heritages, and economic conditions (Nieto, 1996). Teaching in urban classrooms allows candidates to begin to understand the complexities faced by urban youths (Allport, 1954, 1979; Willis, 2003) and to see the children they are serving as individuals not assignments (Kaye, 2004).

Ultimately, service learning encourages teacher candidates to begin to see that they have a *responsibility* to serve under-represented populations (Root et al., 1998). Eyler and Giles's (1994) research concluded that service learning can be an effective pedagogy for developing social responsibility, civic engagement and changing students' attitudes from "I ought to [to] I must and will do" (p. 157). Eyler and Giles (1994) concluded that service learning can be an effective pedagogy for developing social responsibility and civic engagement, and it can change students' attitudes from "I ought to [to] I must and will do" (p. 157). By participating in service-learning experiences, teacher candidates learn pedagogical content knowledge and skills while developing the self confidence needed to risk involvement in urban schools and the commitment to do so.

Methodology

This research project was designed to explore the outcomes of integrating a structured service-learning program into a

reading/language arts methods course as a vehicle for implementing educational reforms in preservice and inservice teacher education. It further sought to investigate the effects on the learning and attitudes of the three populations involved: teacher candidates, fourth grade students, and cooperating teachers.

Participants and Program

This service-learning program was developed and implemented for the first time during the 2003/04 academic year. Nine junior-year teacher candidates volunteered to participate in this research project. Included in this sample were seven females and two males, seven Caucasians and two African Americans, ranging in age from 20 to 27. Three white female cooperating teachers each hosted three candidates in their classrooms. The cooperating teachers ranged in age from 24 to 45 and had three, nine, and 20 years of teaching experience. Eighty-three fourth grade students who all lived below the poverty level also participated. Ninety-six percent of the students were of African American descent.

Beginning during the third week of the fall semester, teacher candidates spent 16 hours—one hour per day spread across four weeks—at a nearby elementary school situated in a distressed, underserved school district in southeastern Pennsylvania. This school site was selected as a venue for implementation because of its designation as a low-performing school, its diverse student population, and its proximity to the university. The school's principal selected the three fourth grade classes to participate in this project. To avoid management issues and to increase opportunities for forming relationships, each teacher candidate was assigned one third of a class (eight students).

Prior to designing the literacy unit that was implemented by the teacher candidates during this research project, the professor met with the classroom teachers and the school's principal to review grade level standards and determine which language arts areas the teachers felt would be most beneficial to their students. The teachers indicated that they were doing very little to teach their students to read and write expository texts, particularly those related to science. Therefore, reading and writing about energy flow within ecosystems was selected as the content of the instructional unit. The teachers also indicated a desire to learn more about using cooperative learning. Based upon this information, a unit was co-authored by the researcher—a reading professor—and a science educator. A sample page is shown in Figure 2. Since the research project was implemented three weeks into the teacher candidates' first methods course, many of the lessons were scripted for the teacher candidates. Each candidate implemented the same plan with his/her group of students, making accommodations as needed to meet the individual needs of their particular students. Before, during, and after the research project, the reading professor engaged the teacher candidates in activities, readings, and discussions about the theories behind each lesson and explicitly modeled the methodology embedded in each lesson.

Data Collection and Analysis

In order to investigate the effectiveness of using service learning as a pedagogical framework, data were collected from each constituency (teacher candidates, fourth graders, and cooperating teachers) before, during, and after the service-learning experience. A variety of data sources was used throughout this project including journal entries from the teacher candidates, field notes compiled by the researcher, transcripts of more formal interviews, and work samples. The procedures utilized to collect and analyze the data are discussed below.

The primary data source used to what the teacher candidates and their students learned consisted of reflective journals completed by the candidates each night. Candidates responded to the following prompts: Today I learned (include links to theory)…; Today my fourth graders learned (provide evidence)…; My lesson could have

Figure Two

Sample of Scripted Lesson Plan: **LESSON 3: ENERGY FLOW IN ECOSYSTEMS**

Concept: Photosynthesis and Energy Flow
Objective: TLW be able to write an explanation of energy flow in a food chain.
Materials: Giant web
Chart paper, markers, student paper and writing utensils.
Writing prompt—one per student
Optional: any posters, realia, etc. you think will help introduce the concept

Connect **"Let's talk about what we read yesterday about food chains while we look back at our word splash. What do we know now about food chains that we didn't know before?"**

Reflect Reflect on the word splash, making additions and revisions as necessary to the splash paper. It is recommended that you cross out incorrect ideas with an "X" so students know they were incorrect. The correct ideas left on the splash will go into the construction of your text-specific organizer.

Organize: Pass out a sheet of paper to each student. Take out your flipchart to start several strings of **falling dominoes** around the topic of food chains. Use "Food Chains" as the title of your dominoes. Ask the students, **"Now let's link our ideas about food chains and their different parts We're going to do this using pictures called falling dominoes."** If thi using falling dominoes, you will want to tell students what dominoes are demonstrate with them), and talk about how each box represents a step i students, **"What words and ideas have you come up with for this reading passage?"** Sketch a falling domino line as the discussion goes along. Use the students' sequential ideas as the labels for the dominoes. Include questions such as, but not limited to, **"What is one of the parts of a food chain? Does it make its own food or eat something else? How does it make its own food? What does it eat? What else is it related to in the chain? What do you know about the energy that one thing gives another when it is eaten?"** (You may want to use this lesson as an opportunity to review decimals. For example, plants pass on 10 percent of the energy they received from the sun, the next link passes on 1 percent of the sun's energy, etc.) Continue to ask students for examples of different ideas until you have completed the sequence of events, from start to finish. Students should copy the class dominoes onto their own paper as they are constructed.

Introduction to Writing: Distribute the writing prompt, saying **"Now we're going to look at the writing prompt for this passage."** Students read the prompt to themselves, as you read it aloud.

You are learning about how living things get energy by eating each other. Suppose you want to tell your parents about what you're studying. Write 2 or more paragraphs to explain what a food chain is and how it works. Be sure to use many details and examples from what you have read to explain the idea clearly and completely. Include an explanation of photosynthesis.

Extend Direct students to begin their writing. Students MUST have access to the graphic organizers they constructed, the reading passage and notes, as well as the giant class web. The goal is to obtain optimal performance. Students may only ask the teacher for clarification about the task. Students may not help one another. Students may attach additional paper as necessary. Remind them to re-read their paragraphs when they're finished. They may complete their writing for homework, if you or they desire. **Collect all materials—Student writing, student organizers, and class organizers.**

Reflect: Activity: Bucket Brigade (You will need to script out this section yourself.)

been improved by…; I am concerned about…; and an ever-changing prompt designed to help the candidates think about the political realities of urban education. These entries served as a way of capturing participants' understandings of what had occurred each day and to explore new ideas. Hatton and Smith (1995), following their meta-analysis of the reflection literature, concluded that journaling after a teaching event allows teachers to systematically evaluate practices and plan their next steps while contrasting their own cultural beliefs with political realities.

Field notes compiled by the researcher during and after classroom visits and debriefing sessions with the candidates and/or cooperating teachers also served as data sources. In order to encourage constructive criticism about the project, participants were told that the researcher was taking notes so that the service-learning experience could be improved for future cohorts. Informed consent was not collected until December.

Several data sources were also collected about the lived experiences of the cooperating teachers. Tape recordings of the planning session and a group debriefing interview conducted by the professor with the cooperating teachers two weeks after the conclusion of the project were transcribed. Field notes compiled following daily impromptu conversations with the cooperating teachers and periodic visits to the classrooms throughout the remainder of the school year to assess ongoing changes in teachers' professional practices were also examined.

The achievement of the fourth graders was additionally evaluated by analyzing writing samples collected on the first and last days of instruction using the same prompt designed to document changes in comprehension and composition. Long term mastery of the major science concepts was reassessed six months after the project was completed when the teacher candidates interviewed eighteen randomly selected fourth graders.

With the exception of the writing samples, the data were analyzed repeatedly with the intent of identifying and labeling emerging constructs and verifying the interpretation of the data through triangulation. Since the researcher was intimately involved in the program design and implementation, a teacher familiar with the course content was hired to insure confidence in and the accuracy of the findings by conducting an "inquiry audit" (Lincoln & Guba, 1985, p. 317). Both the professor and the auditor independently read through the data and conducted their own search for emerging constructs. Once the themes were defined, each entry was coded. Each journal was reanalyzed by the researcher two more times over several weeks to insure consistency in the coding. Transferability, dependability, and confirmability of findings were verified when both of the researchers independently coded an entry with the same construct, and credibility was established when themes were identified from multiple data sources and participants (Lincoln & Guba, 1985). Frequencies for each code by participants were than tabulated. A second independent scorer tallied a randomly selected selection of four journals to ensure the accuracy of the frequency counts. Only findings that were found in journal entries of more than half of the teacher candidates are reported. Then the process was repeated for the field notes and transcripts.

Writing samples produced by the fourth graders were scored using the rubrics presented in Appendix One on four criteria—length, coherence, vocabulary, and demonstrated comprehension of expository readings. Coherence is defined as staying on topic and providing an adequate amount of description, elaboration, evidence and/or support in a clear, logical manner. Length refers to the amount of text students produced on grade level

appropriate paper. Vocabulary was defined as the complexity of word choices. Comprehension of the assigned readings was operationalized as the extent to which students were able to describe the role of various organisms in an ecosystem(s). Table 4 describes each of the five possible scores. All writing samples were initially scored by the teacher candidates. One third of the samples were rescored by the professor to ensure accuracy.

Findings

Teacher Candidates: Learning, Teaching, and Attitudes

Five themes were identified from the teacher candidates' journals. Each will be explored separately beginning with assessment. Only findings that were supported by data from four or more of the teacher candidates are reported in the following sections.

Assessing students' progress continually in authentic ways

Throughout the experience the teacher candidates were required to keep grade books. Midway through their placement the novices became concerned that they had "only a couple of grades and they aren't very high." This conversation led to an immediate discussion about *authentic assessment*. The candidates were asked about the types of data they were collecting and challenged to consider other ways they could document their students' progress. The following day the candidates began to utilize a wider variety of developmentally appropriate assessment techniques. For example, in her ninth reflection Jenna (all names are pseudonyms) wrote, "It is so obvious to me now how much they are learning. They can tell me so much. I used to think tests were all that mattered…" Bill made the following statements in one of his reflections: "Today was a good lesson because when I [verbally] quizzed them, I find [sic] out what the children understand from today as well as from the past few weeks." Field notes documented the teacher candidates' increasing use of positive feedback in motivating and engaging children in order to assess their learning. Candidates also stated that being there every day for four weeks allowed them to see the importance of continuous assessment.

Using a variety of instructional techniques to develop students' vocabularies

From the start of the service-learning experience the candidates were concerned about the difficulty of the *vocabulary* they were being asked to teach. Words like *interdependence, ecosystems, predator, carnivore,* etc. were intimidating to the novices. As Mark stated, "I didn't learn any of these words until high school." Lauren referred to the vocabulary words initially as "big and scary and way too hard for these kids." However, by the end of the first week attitudes had begun to shift as they began to experiment with nontraditional forms of vocabulary instruction.

During their first session with the fourth graders, their lesson plans required the novices to lead a discussion around the word *interdependence*. Once looking for smaller word parts in large words was modeled for them, the novices indicated that it would change how they approached their own reading. Jessica stated, "This is really helpful." Mark wrote: "After I taught them how to decode the word interdependence by examining its parts (inter-depend-ence), during the second lesson, students were able to work together to decode the word photosynthesis. Lakishia even wrote down: 'Producers make their own food by using sunlight. It is called photosynthesis. (Photo means light and synthesis is making something.)' " The candidates then began to implement spontaneous word-analysis mini lessons that were not included in their lesson plans. For example, the words *predator* and *consumer* led to mini lessons on the suffixes er and or. Lauren wrote: "I was able to make the connection from carnivore to carne- like in carne assada and broke the word down for them as 'one who eats steak.' I could see that they got it." She shared this with her cohort which led to several of the candidates drawing

sketches of steaks next to the term carnivore on their graphic organizers. Candidates also became comfortable with teaching vocabulary in context. Michelle wrote, "I always thought that a good teacher taught all of the words in a story before the kids read it. Now I understand that they learn more when they use context clues to figure out new words. It makes them think."

Increasing comprehension and facilitating composition of expository text

The candidates agreed that keeping vocabulary words visible on a giant graphic organizer was a particularly effective strategy for helping students both *comprehend and compose* texts. On numerous occasions the candidates were observed instructing their students to refer to the giant graphic organizer for ideas and spellings as they composed texts. The novices began to see the organizer as a place to keep track of all of the new words that were being learned. By the end of the experience, the eight-foot by eight-foot spaces were completely covered with webs and word sorts. Candidates also discovered the power of using other kinds of graphic organizers to help their students comprehend and compose texts. After a discussion about various types of graphic organizers, Lauren wrote in her reflection, "G.O's are the best tool. I never knew that there were so many different kinds. As a teacher you have to pick the right one [to match the text structure] or it won't work." Other candidates, like Mark, admitted, "I hate to say this, but when I have to write a paper, I just write. I mean I just started at the beginning and go until I have enough [words, pages, etc.]. I never bothered with a graphic organizer…total waste of time."

Meeting reading and writing standards through content area instruction

The teacher candidates also learned to appreciate the efficiency and effectiveness of integrating the teaching of reading and writing with the teaching of science. They explainedthat they understood the importance of addressing both the processes inherent in language arts and the content of the disciplines such as science. As Michelle stated: "I can teach two things at once and they can learn about both. I never thought about it before but you can't learn to read without reading and you can't learn to write without writing. Why not teach science all the time? It's fun." Candidates also remarked that they could use both language arts and content area standards in the same lesson. Lauren wrote in her portfolio, "The experience was good because it focused on both state and national standards and how to use lots of them in one lesson." *Seeing themselves as teachers who are capable of working with diverse students*

The data also proved to be a rich source of personal affirmations. The teacher candidates were very candid in their descriptions of what they expected from urban youth in contrast to what they actually experienced. On the last day of teaching the fourth graders, Jenna shared: "At first I was really scared. I had heard the kids at this school were all black and poor. I thought they would be impossible to teach. But, you know, they were just like all other kids. I could see myself teaching at a school like this. Mark wrote the he was surprised the students "weren't dumb. They really know a lot about life. My childhood was so safe. There are a lot of different things to learn." Michelle included in her portfolio: "I had never thought before how lucky I am to be white. My [elementary] school was wonderful—full of stuff with lots of books. This school was a mess. The classes were big and some of the teachers didn't know much about science at all. I guess this is what is meant by white privilege."

Fourth Graders

Data collected from the students' writing samples also documented growth in all of the areas assessed. Scores in writing, as measured using a five-point scoring guide increased in all four areas: coherence, length, vocabulary, and comprehension (see Tables One through Four for scoring rubrics). Figures Three and Four show a typical student's pre and post writing samples in response to the same

visual prompt of the rainforest. On the pretest this student received the following scores: Length: 1, Coherence: 2, Vocabulary: 3 and Content 1. Posttest scores for this same student increased dramatically during the four week intervention (Length: 3, Coherence: 5, Vocabulary: 4 and Content: 5). Less than ten percent of the students' scores on any of the three measures decreased.

When pre and post test scores for length were compared, scores increased by an average of .8 rubric points. Students who had scored a one or a two on the initial sample showed the most growth and increased their scores an average of 1.5 points. In other words, the lowest students composed more than twice the amount of text when post test samples were compared to their pretest samples. Of those who scored a four on the initial sample, 90% maintained their score accounting for the least amount of growth. Proficient students tended not to show much improvement in the length of their writing but those who were initially the lowest improved significantly.

Sixty-six percent of the students raised their coherence score indicating their ability to stay focused on a topic. Coherence scores rose from a mean of 2.3 to a mean of 3.4—a growth of 1.1 points. As was shown by the findings for length of composition, the lowest students on the pretest showed the greatest gains in scores for coherence. On the final writing sample, 85% included a topic sentence compared to less than 30% on the pretest. The majority of students included several details to support their topic sentences. Findings for improvement in vocabulary usage also increased from an average of 2.7 to 4.2.

Students retained the information they had learned related to energy flow in ecosystems. Six months after the intervention, 100% of the students surveyed were able to define the term *interdependence* and fully explain it using examples from one or more ecosystems. Students attributed their learning to the variety of reading, writing, and hands-on activities that aided them in understanding and applying the concepts. Recalling the dissection of owl pellets, LaShawn remarked "I got it then. Owl pellets is what we been reading and writing about. Everything gets eaten by somebody..."

Cooperating Teachers

After observing the lessons taught by the teacher candidates, the host teachers reported several things they would like to integrate into their own instructional practices. The teachers stated that their fourth graders learned a tremendous amount of science. The teachers perceived this gain as a direct result of the background knowledge developed through hands-on activities prior to reading and writing. As a result of this finding, the teachers began to do more to develop background knowledge prior to reading assignments. Miss Clark stated, "I can't always do an activity before I have them read but I now at least talk about what they will be reading before they start to read, especially the vocabulary. They do seem to learn more because they are able to focus more."

The teachers reported that the children did not seem to learn as much about the writing process because the teacher candidates needed to provide explicit instructions regarding the writing process. One of the fourth grade teachers, Mrs. Morris, reported that the "steps of the writing process were not identifiable. The teacher candidates did not provide directions." The other cooperating teachers supported Mrs. Morris's ideas and felt that their fourth grade students needed much more explicit direction regarding the writing process. These observations strengthened the cooperating teachers' own understandings.

In addition, the cooperating teachers recognized that their students could write expository essays more successfully with the aid of graphic organizers and have incorporated them into their classroom practices. They noted that having the giant graphic organizer as a backdrop to each lesson helped students to see the "big picture" throughout the duration of the project. Mrs. Thompson cleared a large section of one bulletin board to use as an organizer for her upcoming unit on government.

The cooperating teachers made several other observations related to their fourth graders; the teachers were surprised that their students were able to successfully write research-based reports collaboratively. The cooperating teachers shared that the teacher candidates' use of cooperative learning strengthened their teaching, even in instances where the toughest children were grouped together.

Another area that the cooperating teachers learned about was how to mentor developing teacher candidates. Mrs. M reflected on the fact that "Susan was my project." She claimed that she learned how to get this very tentative candidate involved in her classroom. Miss Clark said that she "learned how to help these teacher candidates manage. Two of them were so frustrated and it was great to learn how to help them."

Conclusions

Traditionally, teacher candidates serve a lengthy apprenticeship of observation, frequently of poor teaching (Alvermann, 1990). By adding a structured service-learning component to a reading methods course, this project eliminated the observation period; teacher candidates immediately assumed the role of instructor. Service-learning provided opportunities for novices to learn from and with urban youth and experienced teachers while benefiting all three populations. Results show that this practice was effective in changing the performances and attitudes for all three constituencies.

The candidates reported that the time spent in their field placements positively affected their learning. Their knowledge of teaching expanded. The experience made real the theories they were reading about in their texts. Their attitudes towards teaching were enhanced and they gained self confidence. They also benefited from the opportunity to work in close contact with students who were culturally different from themselves. Several expressed a new willingness to consider a career teaching in an urban environment. At one of the debriefing sessions near the end of the service-learning experience, two of the female novices started complaining about all of the extra time the service-learning component required. They were immediately chastised by their fellow classmates who stated: "This has been sooooo [sic] worthwhile" and "This is what it's all about!" and "I feel like a teacher…and I love it!" The candidates all stated that they would recommend this experience to their peers.

Concurrently, the educational achievement of the fourth graders was enhanced by their participation in the project. They increased their performance in both reading and writing of expository texts while acquiring scientific knowledge and developing richer vocabularies. They additionally benefited from the small group interactions, individualized instruction, and the focus on critical thinking that is often difficult to accomplish in a whole group setting. In addition to specific findings about composition length and cohesion, vocabulary, and science comprehension, the candidates also observed a willingness in the students to engage. Initially, students did not want to share their knowledge with their peers and were reluctant to attempt the difficult reading and writing tasks presented to them. By the end of the project, the students would not stop talking about their findings, were eager to share their writing with others, and eagerly attempted assignments.

In reflecting on their own learning, the cooperating teachers discovered that they learned a lot of science through pre-reading activities and the science readings. They also felt that they learned new pedagogical techniques. Miss Clark reported that "the demonstration lessons were wonderful and some of these ideas have transferred to my teaching…underlining key words, highlighting, chunking." Mrs. Thompson added that while she learned new teaching ideas, the experience "confirmed my thoughts that what we are doing in our classrooms is also being taught at the university." The group agreed that they could use harder reading materials with their students

and, given the proper guidance, their students could achieve. Mrs. Morris went on to say, "I found out that I could use harder materials and expect my children to do more with these. In particular, I have been doing more with Weekly Reader. We're doing one article a week, we're taking notes, and we're identifying key words into vocabulary lists…I'm not going to 'spoon feed' them anymore."

Periodic observations during the remainder of the school year provided evidence that, by hosting these fledgling teachers in their classrooms for the four-week block, the cooperating teachers made lasting changes in their practices. Teaching content was altered in that they were more willing to engage their students in difficult readings with the support of graphic organizers. Attitudes towards cooperative group work were changed by observing the success of their fourth graders; desks were now arranged in groups rather than rows.

Although the small size of this study is a limitation and replication on a larger scale is needed to verify the findings presented, the results are very encouraging. Significant changes related to the reforms presented in Figure One were implemented and long term learning for all three populations were noted. Results show that this type of service-learning program can be effective in changing performances and attitudes. In fact, late in the summer following the implementation of this study, I unexpectedly received a phone call from the building principal. She jubilantly reported that, for the first time, her school had met their required annual yearly progress (AYP) goals and was the only building in the district to do so. She wanted to thank me for our role in preparing her students to pass the literacy portion of the exams. The service-learning experience provided growth not only for the teacher candidates, but also for the fourth grade students and their teachers. Furthermore, the service-learning methodology may also have spurred lasting positive changes in the school where the project took place.

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Table One:

Writing Rubric for Coherence

Scoring Guide:
1—Unrelated to topic; copied
2—Addresses the topic minimally; may wander off topic; fragmented ideas
3—Stays on topic but provides little description, elaboration, evidence or support
4—Provides descriptions, elaboration, evidence and/or support for topic sentence; addresses the topic without wavering; writing is understandable and coherent but lacks complete control
5—Demonstrates ease and facility in expressing ideas; writing flows smoothly and naturally and remains focused on topic; provides descriptions, elaboration, evidence and/or support in a clear, logical manner

Table Two:

Writing Rubric for Length

Scoring Guide:
1—3 lines or ~~less~~ fewer
2—quarter page
3—1/2 page
4—3/4 page
5—1 or more pages

Table Three:

Writing Rubric Used for Vocabulary

Scoring Guide
1— Few words, mainly from prompt; copied
2— Mostly one syllable, safe words; simplistic
3—One-two syllables, some compound words, may use some basic affixation
4—Substantial use of polysyllabic words; precise word use; more complex affixation
5—Demonstrates a strong command of the English language; Latin and Greek roots and suffixes; lexical variety

Table Four:

Comprehension of Science Readings Rubric

Scoring Guide:
1—Correctly labels and describes some of the organisms
2—Correctly labels and describes all of the organisms
3—Correctly labels and describes all of the organisms and includeds some of the concepts of producers, consumers, and decomposers
4—Correctly labels and describes all of the organisms and includeds all of the concepts of producers, consumers, and decomposers
5—Correctly labels and describes all of the organisms, includeds all of the concepts of producers, consumers, and decomposers, and includeds the concept of interdependence.

Figure Three:

Pretest Writing Sample

Monkeys live in the rainforest. So do jaguars. Its hot there. It rains a lot.

Figure Four:

Posttest Writing Sample

There are three different kids of animals that live in the rainforest. They are 1) herbivores, 2) omnivores, and 3) carnivores. Herbivores eat producers which are plants. Some kinds of herbivores are sloths and monkeys. Omnivores aren't picky. They will eat both plants and animals. I am an omnivore. In the rainforest lizards and ants are omnivores. Then there are carnivores who eat each other. Spiders eat insects and jaguars and eagles eat meat. The sun is important because it makes everything grow. The producers make food from the sun. If the sunlight stopped the producers would die and so would everything else.