

A 360° Evaluation of the Multiple Outcomes of a Service Learning Program in Teacher Education

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Abstract

Service learning programs often involve multiple stake holders and generate intended main effects as well as unanticipated spillover impacts. While evaluations aiming at a single aspect of impact and focusing on a single stage of a service learning program can be informative and valuable in answering isolated questions, they often fail to provide a complete picture to fully capture the multifaceted effects that a service learning program can generate in the process and at the end. This proposal describes an effective 360° evaluation of a service learning tutoring program in teacher education at a research university by following Stufflebeam's context, input, process, product (CIPP) model. The process and advantages of the 360° evaluation during the context, input, process, product evaluation is described and discussed. The 360° evaluation using the CIPP model is systematic and can help researchers strive toward a more holistic appraisal of service learning programs.

Keywords: Service Learning, 360° evaluation, CIPP Evaluation Model,

1. Purposes of the Study

A major characteristic and merit of service learning is that learning takes place while service is provided. An effective service learning program should demonstrate two sets of desirable outcomes: the learning gain of service providers, and the positive impacts on service recipients. These outcomes tend to be both cognitive and affective, and multifaceted. Additionally, service learning programs often involve multiple stake holders and generate intended main effects as well as non-intended spillover effects. While assessments aiming at a single aspect of service learning impact based on either the qualitative or quantitative research method can be informative and valuable in answering isolated questions on the value of service learning, they often fail to provide a holistic picture to truly and fully capture the multifaceted impact that a service learning program can produce. This article describes an effective 360° assessment of a service learning tutoring program in teacher education at a research university in the southeast United States by using mixed-methods research. The needs for, and the process and advantages of the 360° assessment of the learning outcome and the service impact are described and discussed.

The 360° assessment model serves as an ideal goal for us to strive for toward more holistic and accurate appraisal of the outcomes and influences brought about by a service learning program, which will afford us the information needed to make more objective and better informed judgment of a service learning program's merit and worth, as well as the possibility to be able to compare the strengths and weaknesses of different service learning programs.

2. Theoretical Framework

Service learning program's impact is usually multidimensional. Service learning involves the integration of community service into the academic curriculum (Koliba, Campbell, & Shapiro, 2006). Not only does the service learning project meet the needs of a community, but it also demonstrates the value of active community involvement and promotes the notion of caring for others (Koliba et al., 2006). In teacher education programs, pre-service teachers who participated in a service learning project gained confidence as professionals and engaged in leadership roles following their participation in the project (Bullard & Maloney, 1997). Pre-service teachers who participate in service learning activities report an increased self-awareness regarding their upcoming role as a teacher and a feeling of empowerment and accomplishment when addressing standards through project-based activities (Chen, 2004). Furthermore, pre-professionals in professional preparation programs cite service learning opportunities as a powerful tool to increase multicultural awareness and a sense of social justice allowing them better able to work with students and families from diverse backgrounds (McHatton, Thomas, & Lehman, 2006).

Participating in a service learning project can be an important opportunity for children who are the recipients of service learning (Scott, 2006). The service learning experience can reinforce and strengthen children's academic skills while at the same time enhance their self-esteem and independence.

The outcomes of a service learning program can be cognitive or affective (Eyler & Giles, 1999). Some of these outcomes are better assessed by utilizing quantitative research methods and readily-available research scales, others are not so straightforward, and require the kind of inquiry that is afforded by qualitative research methods. Some of these outcomes are observable directly from the work of the service learning participants, however, many of the impacts are not so apparent and need to be uncovered indirectly from people who work closely with the service learning participants, including university faculty advisor, cooperating teacher, school principal, peers, even parents.

Effective program evaluation requires all major aspects of a program be evaluated to provide a full assessment of its effectiveness (Stufflebeam, 2003). Attempting to evaluate a program from one single aspect often can be no more effective than the blind person trying to describe an elephant after only touching one part of its body.

Quantitative research and qualitative research differ in many ways, and each is best suited for different type of research questions (Fraenkel & Wallen, 2008). The most noteworthy difference lies in that quantitative research is best in answering questions regarding "if a difference or relationship exists" and the qualitative research's strength lies in its ability to tackle questions regarding "why and/or how a difference or relationship exist." In this study, the research question, "is the motivation score of the service learning group higher than that of the non-service learning group?" is best answered by quantitative research. In contrast, the question "why did the service learning group have higher (or lower) motivation than the non-service learning group?" could be explored by using qualitative inquiries.

Specific assessment methods also differ in many ways and each can offer unique advantages. For example, Thomas and colleagues noted marked differences between the focus group interview and the individual interview methodology (2005). Focus group interview is ideally suited for exploring the complexity surrounding social behaviors within the context of lived experience, and in ways encourage the participants to engage positively with the process of the research (Rabiee, 2004). One of the distinct features of focus-group interviews is its group dynamics; hence the type and range of data generated through the social interaction of the group are often deeper and richer than those obtained from one-to-one interviews (Thomas et al., 1995). Focus groups could provide information about a range of ideas and feelings that individuals have about certain issues, as well as illuminating the differences in perspective between groups of individuals. The uniqueness of a focus group is its ability to generate data based on the synergy of the group interaction (Green et al. 2003).

Assessing the multifaceted impacts of service learning programs often requires the researchers to investigate service learning program from more than one angle, to use more than one research approach, and to adopt more than one research methods. The use of multiple assessment approaches and methods allow us to "pool" the

strength that each method has to offer. The 360° assessment is essential in capturing both service learning's intended main impacts and other spillover effects.

3. Methodology

During the Spring Semester of 2008, a service learning tutoring program was implemented at a research university in the southeast United States. A total of 59 pre-service teachers taking a course in Diagnostic/Prescriptive Teaching of Reading participated in the study. Thirty-seven pre-service teachers were in the two sections of the course that were randomly selected to serve as the experimental group, while the other 22 were in the two sections that served as the control group. Two faculty advisors collaboratively provided supervision and instruction to these pre-service teachers. The sections were taught by following the same course outline except the service learning component. Pre-service teachers in the experimental group completed a service learning component by tutoring a total of 60 Response-to-Intervention students in kindergarten, first, and second grades at a local elementary school. The Response-to-Intervention students were selected because they were not receiving special education services but were working below grade level in reading and writing, therefore they can also be thought of as at-risk readers and writers. In this study, terms “students”, “at-risk learners” or “readers” are used interchangeably to refer to these Response-to-Intervention students. The control group implemented the course requirements in a traditional field placement setting; working with students recommended by the classroom teacher. To protect participants' rights, all names used in this study are pseudonyms.

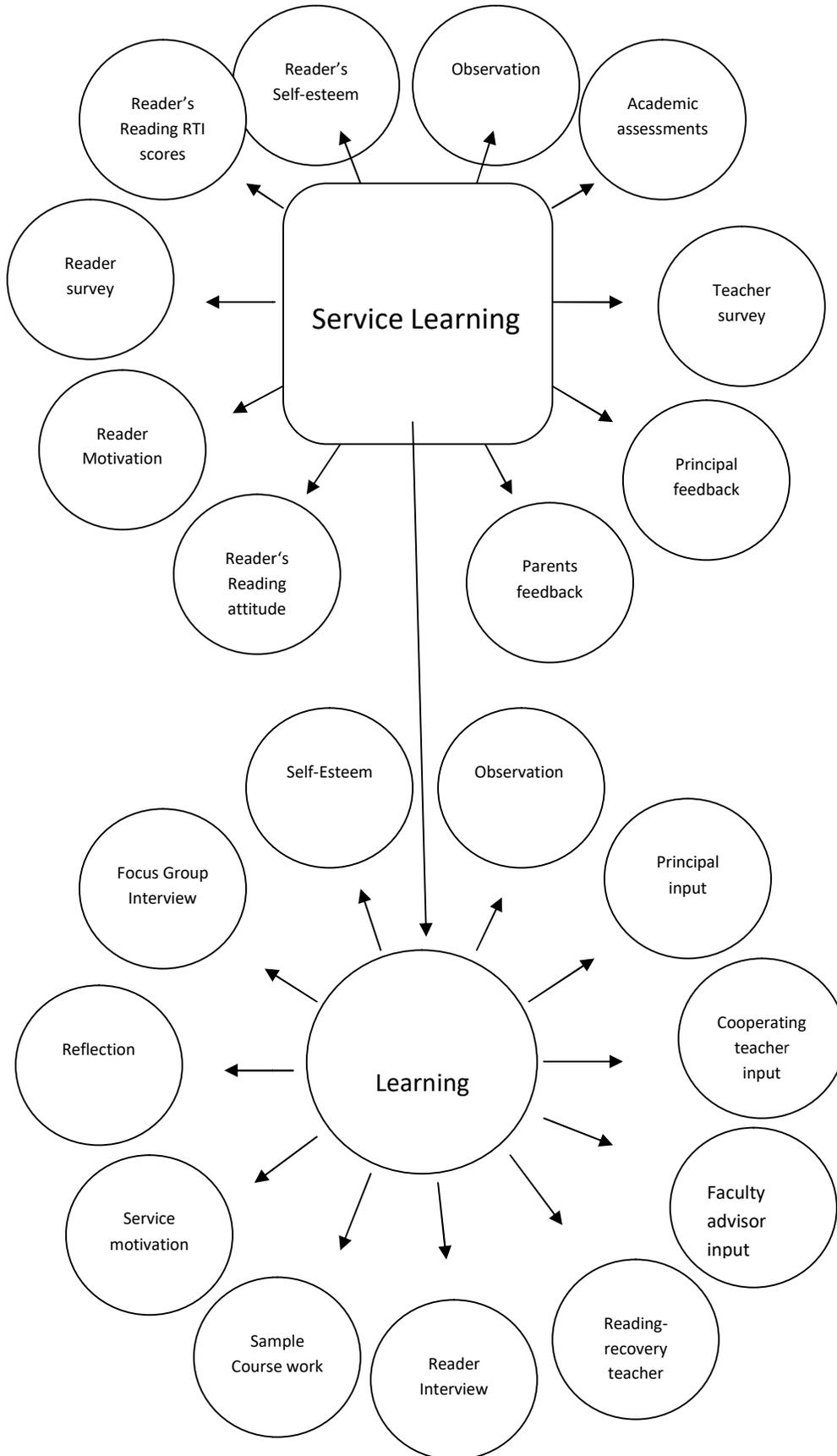
Working with the elementary school students on a weekly basis for eight weeks, the pre-service teachers in the experimental group administered literacy assessments including running records (Clay, 1993), the Qualitative Reading Inventory-4 (Leslie & Caldwell, 2006), the Elementary Reading Attitude Survey (McKenna & Kear, 1990), and the Burke Reading Interview (Burke, 1980). Based upon these assessments, the pre-service teachers designed and taught lessons that targeted the students' needs while building upon their strengths. They also shadowed the at-risk learners during reading and writing instruction. During the rest of the 15-week semester, the pre-service teachers spent three hours and 30 minutes on preparation of tutoring and one hour and 30 minutes providing tutoring service to the at-risk learners each week.

In addition to working with the at-risk learners on a weekly basis, the pre-service teachers also worked closely with cooperating teachers in the elementary school, exchanging information, providing updates, and asking for advice. Moreover, the two university faculty advisors also kept in close contact with the school principal, who took an active part in the program by overseeing the process and holding frequent conversations with the pre-service teachers and the cooperating teachers.

4. A 360° Assessment of Pre-service Teacher's Learning and other Service Impact

The research study was centered on two overarching questions: (a) Did the service learning experience make any difference on pre-service teacher's learning? (b) What impacts did the service learning program have on others, especially the at-risk learners? In order to fully understand the many aspects of the impacts of the service learning tutoring program, our assessments were systematically conducted from multiple angles using several assessment techniques. To better organize the assessment process, the other impacts of service was examined separately from its impacts on learning. That is because learning outcome is at the center of a service learning program and deserves a full 360° assessment all by itself. The assessment of pre-service teachers' learning was centered around the pre-service teachers and conducted from the following angles: pre-service teachers' own reflection, direct quantitative assessments using survey research scales, focus group interview of pre-service teachers, sample course work, course performance, faculty observation of tutoring sessions, input from university faculty advisors, elementary school principal, cooperating teachers, reading-recovery teachers, and the elementary at-risk learners. The assessment of other impacts of the service provided in the service learning program attempts to uncover all noteworthy impacts on involved community partners, with an emphasis on the at-risk readers being tutored. Figure 1 depicts the 360° assessment elements.

Figure 1. A 360° Assessment of Service Learning



4.1. Reflection

Reflection is recognized to be an essential link between community experience and academic learning (Felten, Gilchrist & Darby, 2006). Reflection can also serve as a mirror reflecting the inner changes in the service providers and make these changes visible. Following each of the tutoring sessions, the pre-service teachers spent fifteen to twenty minutes to reflect on what they gained from the interactions with and what they contributed to the students and the cooperating teacher. This served as an informal form of ongoing self-evaluation. Moreover, these reflective journal entries were collected and entered into NVivo 8 and analyzed qualitatively by two experienced researchers independently.

A list of questions was provided to guide the pre-service teachers' reflections (see Table 1). These questions were designed to promote reflective thinking about what the pre-service teachers were learning and what they were contributing to the students in the public school setting.

Table 1 Reflection Questions for Service Learning Logs

Reflection #1	What happened? Did anything take you by surprise? What are you contributing? What are you receiving?
Reflection #2	What did you contribute to the students and teachers at Western Elementary this week? What did you gain this week as a result of your work at Western Elementary this week?
Reflection #3	How has your work with your case study student changed since the first week?
Reflection #4	In your service learning experience, you may be working with individuals who are culturally different from you. Identify ways that you are similar to and ways that you differ from your case study student. How do these cultural differences impact the work you do with the student?
Reflection #5	Describe at least 2 ways you have helped your case study student. Describe at least 1 thing you have learned from your case study student. How will this knowledge help you in the future?
Reflection #6	What will you take away from this service learning experience? What do you hope your case study student will take away from this service learning experience?

To ensure the trustworthiness of the findings from the qualitative analysis of the reflection logs, the codes and findings from the two independent researchers were analyzed for percentage agreement and evidenced a high reliability. Among several other themes emerging from the reflections, the intensified passion toward students and a strengthened sense of responsibility were most apparent. The analysis indicated that pre-service teachers involved in service learning projects can learn about course content better while engaging in activities that meet the needs of the community, in this case at-risk readers and writers.

Findings revealed that pre-service teachers' language changed over time as a result of engaging in service learning, particularly the words the pre-service teachers chose to describe their case study students. At the beginning of the service learning experience, the pre-service teachers used words like sweet, polite, talkative, enthusiastic, and other general terms to describe the elementary school students. After four weeks of working with these students in one-on-one tutoring sessions, the pre-service teachers were better able to articulate their case study student's strengths and needs and were able to describe techniques they used to address those needs. For example, pre-service teacher Trisha described her work with six-year old ELL student Manuel in this way:

In the first two weeks, Manuel and I were just going through the motions it seems. I didn't know what to do with him and he couldn't tell me. Now, though, I think he is comfortable with me and I can see him improving. Last week, he only knew two letters in his name and this week he knows all but two. We are working on an English/Spanish alphabet book and I think that really helps him.

In addition, the pre-service teachers made frequent comments and inquires about the most effective approaches for addressing the case study students' individual needs. Ishawna state, "I want Josh to go beyond his current reading level, so I'm constantly looking for other ways to help him. I take what we learn in class and try to figure

out what is appropriate for him.” When unsure about the best way to reach a student, the pre-service teachers often initiate consultations with the classroom teachers, Reading Recovery teachers, and course faculty advisor. The pre-service teachers were so invested in their students’ success that a number of them chose to continue tutoring after the semester ended.

By the fifth week of the service learning project, the researchers noted a marked change in the confidence level of the pre-service teachers. Instead of comments like “I don’t think I really contributed much, expect in keeping some of the students focused,” pre-service teachers began to write the following comments in their reflection logs:

One way that I have helped Zanjah (case study student) is by helping her comprehend the text. I have done this by asking her questions while we are reading and preparing her for ways she can do this when reading on her own.

I have helped Robert (case study student) by giving him strategies to solve unknown words. I taught him to check the picture, repeat the sentence, and start sounding out the word before he asks for help.

The reflections indicate an increasing level of sophistication in the pre-service teachers’ understanding of the reading process but also an increased awareness of their roles in supporting the development of effective reading processes in elementary school students.

4.2. Focus group interview

Focus-group interviews, as a means of qualitative data collection, are becoming increasingly popular amongst professionals in research for exploring what individuals believe or feel as well as why they behave in the way they do. The main aim is to understand, and explain, the meanings, beliefs and cultures that influence the feelings, attitudes and behaviors of individuals. Multi-session focus group interviews were conducted with both the control groups and experimental groups before and after the service learning intervention to explore whether service learning has made a difference in their confidence in making a difference and/or personal social values related to community service, and whether there was a change in their attitudes and dispositions about working with students who come from diverse backgrounds. These interviews were video-typed, transcribed and analyzed using NVivo 8. It was found that the service learning pre-service teachers cared more to learn their knowledge and skill because they realize that these are not just the kind of things that they would take a test on, but would apply to real people and could make a real difference. They felt more confident and their work more appreciated. The following are quotes from the focus group interview transcripts:

At first, my students did not get along. By me taking the time to talk with them and be sure to never show favoritism, I was able to get them to work together. That made me feel really good.

Taking the time to show each student that you care and having a reward system worked for me....had I not had this experience, I may not have thought to do this in my own classroom. I have learned that I can manage a group of students and still have them like and respect me.

The pre-service teachers initiated, discussed, and made many comments about the value of the service learning experience. Alyson state that as a result of the service learning experience, she realized that she could actually make a difference in the life of a student. Katherine noted that she was no longer scared to work with struggling readers because she now had some proven techniques she could use. Finally, the pre-service teachers noted that the service learning experience made the course content “real.” Shakira wrote, “Learning about teaching reading [from a textbook] is completely different than reading with an actual student.” For the pre-service teachers in this study, the service learning experience afforded them the opportunity to apply course content in authentic learning environments while the elementary school students benefited from the extra one-on-one time.

4.3. Quantitative assessments of affective learning.

In addition to the informal qualitative self-assessments, quantitative instruments were used in a pre-test post-test control group design to assess changes in pre-service teachers regarding the following constructs: community service self-efficacy, motivations regarding volunteer activity, self-esteem, and confidence in making a clinically significant contribution to the community through service. The following research instruments were used: the Self-esteem Scale (Rosenberg, 1965), the Community Service Self-efficacy Scale (Reeb et al., 1998), the Volunteer Functions Inventory (Clary et al., 1998), the Personal Social Values Scale (Mabry, 1998). For each of the constructs, a gain score was calculated for pre-service teachers by subtracting their pre-test score from their

post-test score. An independent samples t-test was used to conduct a gain score analysis (also called change-score analysis) to investigate whether there was a difference between the amount of change in service learning group and the control group in each of these constructs. A t-test on gain score analysis is one of the effective ways to control for pre-existing differences between two comparison groups, and therefore minimize the influence of possible pre-existing differences on the observed outcomes, and improve the validity of the findings (Maris, 1998). These direct quantitative investigations revealed several important changes in pre-service teachers' affective growth such as confidence in making a clinically significant contribution to the community through service ($p < .05$) and motivations regarding volunteer activity ($p < .05$).

4.4. Other assessments of learning

Pre-service teachers' course related academic performance should not be compromised by the service learning component. Rather, their academic performance should be enhanced. Pre-service teachers' academic performance was monitored throughout the process. University faculty advisors regularly conducted non-participatory observations of the tutoring sessions. Samples of pre-service teachers' coursework, faculty observation field notes, curriculum-based measures, and reflective journals were collected and assessed by the university faculty advisors to explore the pre-service teachers' understandings and mastery of the reading process and reading instruction. Both advisors reported more refined course work, seemingly higher dedication to the course, superior level of mastery of the reading instruction skills, and deeper understanding of the course content.

4.5. Input from community partners

Community partners working closely with pre-service teachers were interviewed regarding their feelings about the service learning participating pre-service teachers. These include university faculty advisors, the elementary school principal, the cooperating teachers, and the elementary students. From these sources, we gained first-hand information that was not available through other means of assessment. The cooperating teachers reported initial resistance to these service learning pre-service teachers. They said that they thought these service learning pre-service teachers may require more attention and more time on their part, and later discovered that that was not the case, and were surprised that it was actually quite the opposite. The reading-recovery teachers, in particular, commented on the apparent higher level of interest in the subject matter and skills, and more eagerness to learn demonstrated by pre-service teachers in the service learning group than those in the control group. We were informed of the pre-service teachers' sense of proud and devotion, which translated into increased diligence and greater awareness of responsibility. They are "easier to work with, more willing to work, and more determined to make a difference in the (elementary) students."

5. A 360° Assessment of Service Impact on Elementary Students and Other community partners

Using similar approach and mixed-methods, the program's impacts on elementary students were also continuously assessed formally and informally. To assess the effect of the service-learning project on the elementary school students' self-esteem, steps toward independence and to document students' growth and academic achievement in reading and oral and written language skills, formal academic assessment, informal academic assessment (e.g., content analysis of samples of student work), structured observations, curriculum-based measures, and students' reflective journals were employed both during the project and at the end. Elementary students' perceptions of themselves as readers, oral communicators, and writers were assessed pre and post by student interest inventories and the Elementary Reading Attitude Scale (McKenna & Kear, 1990) administered by the tutors.

Improved attitude toward reading and significant increase in students' perceptions of themselves as readers were evidenced in the results of t-tests on the pre- and post-assessment scores. Students' scores on the RTI tests demonstrated a consistently increasing trend. The t-test on students' self-esteem using Self-esteem Scale (Rosenberg, 1965) did not show statistically significant difference between pre- and post-test ($t = .128, p = .899$). A survey of elementary school teachers was conducted to measure their beliefs about the impact of the program regarding each individual elementary student who was the recipient of the service learning tutoring program. The results indicate that the majority of the student demonstrated improvement in reading, writing, spelling, problem solving, motivation, confidence, and attendance. However, roughly only 50% of the students showed increased self-esteem and critical thinking skills.

A random sample of parents was also interviewed regarding whether any changes in their children were observed. The teachers and most parents noted observed positive changes in the students related to reading and writing.

Feedback from community partners was obtained to discover any impact the service learning program had on them. These partners include cooperating teachers, reading-recovery teachers, and the school principal.

6. Conclusion and Discussion

Direct quantitative investigations revealed several important changes in pre-service teachers' cognitive learning and in their affective growth. The differences on many other factors did not reach statistical significance, possibly partially due to the small sample size (Zhang & Algina, in press) and the insensitivity of the research instruments. However, the qualitative data collected through pre-service teacher self-reflection, cooperating teacher and faculty advisor's observation of the pre-service teachers, focus group interviews of the pre-service teachers, and interviews of the elementary students, the cooperating teachers, the reading-recovery teachers and the principal served very well as informative supplementary evidence providing rich, more in-depth information that is not available from the quantitative inquiries. These qualitative data afford us the eyes and ears to truly see and hear about the positive impacts this program had made on its participants. It is evident that certain changes sometimes do not easily translate into statistically significant numbers. The assessments of the impacts on elementary students worked in the similar way.

Conducting the 360° Assessment is not an easy task but a worthwhile and necessary one. It is very hard to imagine one would fully appreciate the impacts that the service learning program had on both the service learning provider (the pre-service teachers) and the service recipients (the elementary students) without looking at the program from multiple angles.

From passionately embracing service learning to seriously adopting a service learning program as a routine practice in education requires evidence of merits gathered from careful, objective, and effective assessment of all its major aspects. The assessment of service learning programs is not a simple task. The snap-shot type of assessment from a single angle using mono-method is unlikely to provide a complete picture of the many facets of service learning's effect. The 360° Assessment described in this research provides researchers and practitioners an example of how service learning program can be assessed more fully, deeply, and more effectively.

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