

Multifaceted Aspects of Assessment in Service Learning: Lessons Learned

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Article Overview. Service learning is a teaching methodology that combines community service with explicit academic learning objectives, preparation, and reflection. It is a formal program that fosters student service in the local community and coincides with the theme of a course or specific topic of discussion. Much of the research in service learning, however, has been conducted on undergraduate students. Despite educators' eagerness to incorporate service learning throughout university health professions education programs, there is a paucity of graduate-level outcomes research in evaluating the effectiveness of personal and professional development. This article synthesizes the available instruments to measure outcomes of service learning. It presents strategies for the use of qualitative and quantitative analyses in measuring the effectiveness of service learning within a physical therapist education program curriculum.

Key Words: Service learning, Physical therapy, Graduate, Outcome assessment.

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INTRODUCTION

A dynamic physical therapist (PT) interacts daily with people of all backgrounds, age groups, and heritages. To prepare students for this reality, educators are often challenged to design for them engaging cross-cultural experiences. Service learning is a pedagogy that combines community service with explicit academic objectives, preparation, and reflection,¹ and it is an effective tool for linking academic learning with practical experience.² Before adopting service learning as a mandatory experience within the curriculum, it is important to assess its effectiveness in promoting the skills necessary for successful physical therapist–patient/client interaction. This article will present our initial attempt to assess the benefits of service learning through quantitative and qualitative data collection. It will conclude with a discussion of strategies for assessment that include practical tools for implementation in planning for successful service-learning outcomes.

Introduction to Lessons Learned in Assessment

Our research exploring the use of various assessment strategies was conducted in 1999, when few instruments were available to measure service learning for graduate students. Therefore, both qualitative and quantitative research methods were used to analyze the integration of service learning into the curriculum of a graduate physical therapist education program. We hypothesized that graduate PT students who were educated using a service-learning model would demonstrate increased levels of civic responsibility when compared with graduate-level PT students who had not participated in a service-learning course.

Ninety-two Master of Physical Therapy (MPT) students participated in the study at the initiation of the fall semester (1999) and at the completion of the spring semester (2000). All students were given a survey at the beginning of the fall semester and again in the spring, at the end of the academic year. They were also instructed to keep journals of their experiences on a regular basis and to write in them immediately after their service. Upon completion of the 30 hours, students

were asked to write summaries of their entire service-learning experience. Faculty members teaching in the program were responsible for discussing service learning as it related to physical therapy interventions and physical therapist practice, thereby guiding students toward making connections between learning in the community and in the classroom or clinic.

The Data Collection Instruments

The guiding questions for this study included:

1. How does your experience affect the way you view service learning in the community?
2. How does service learning shape your role as a PT?
3. Do you have a greater understanding of yourself as a result of service learning?

The data were both quantitative and qualitative in nature. Qualitative data included journal entries and summary statements.

The Attitudes Regarding Civic Responsibility and Skill Development Scale (ACR) was the instrument chosen to measure differences over an academic year.³ The ACR is a set of surveys created by an expert panel at the Montana Campus Compact; each survey participant indicates how strongly he or she agrees or disagrees with each statement. The first subsurvey, *Community Life Survey*, is composed of 29 statements and is used to evaluate the participants' involvement in the community. The second subsurvey, *Activities and Interests*, is composed of 11 statements and is used to assess gains associated with participation in activities. The final 8 statements inquire about *Personal Characteristics*, and some statements ask volunteer work. All students completed the survey twice in order to detect difference over time.

Quantitative Results

No significant differences were found among the 3 domains of the ACR. For example, the Community Life Survey included the following statements: "I have a pretty good understanding of the important social issues that confront our society" ($\bar{X} = 4.01$, $SD = 0.63$); "Community service is a responsibility

all people should share" ($\bar{X} = 4.14$, $SD = 0.59$); and "Only those who have a lot of time should assume the responsibility for participating in community service programs" ($\bar{X} = 2.08$, $SD = 0.63$).

In addition, the Activities and Interests Survey also showed no significant difference between the groups ($\bar{X} = 44.45$ for the control group and $\bar{X} = 45.36$ for the experimental group). This section included the following statements: "I have participated in activities in which I made an important difference in someone's life" ($\bar{X} = 4.08$, $SD = 0.74$) and "I have participated in activities which helped me feel comfortable with people different from myself" ($\bar{X} = 3.94$, $SD = 0.80$). Finally, the Personal Characteristics Survey revealed no significant results between groups ($\bar{X} = 21.44$ for the control group and $\bar{X} = 20.86$ for the experimental group). The following statement is one example from this section: "Volunteering for community service is just not for me" ($\bar{X} = 1.94$, $SD = 0.86$).

Through the analysis of the ACR, we noted a ceiling-and-floor effect in which students already had many of the perceived qualities of civic engagement at baseline. Some of these skills may have been attained through previous volunteer work in physical therapy or other settings. Therefore, it was important to examine the qualitative findings.

Qualitative Analysis

In analyzing the data, we used a coding system to organize the links and patterns in the data. From these links and patterns, we made generalizations and assertions as they related to the research questions. Through repeated readings and examinations, we tested the validity of the assertions and sought to identify disconfirming evidence. The strongest assertions had the most linkages and patterns across the widest range of data. Through this systematic examination of all the evidence, we determined the assertions that best represented this study. Two independent readers coded the journals and 2 themes emerged. First, service learning had a positive impact on students' personal and professional development, which is captured by this student's comments.

This service learning experience taught me to keep an open mind the next time I do community service. It also taught me to ignore any stereotype or assumption I may have about the community service. The more open minded you are, the more you learn from the experience. I used to believe the society definition of service being a dreaded duty, but after doing service learning I think of it as a positive learning experience. Working

with different cultures and finding out their beliefs, work ethic, and customs will definitely make me a more well rounded person.

Second, service learning was a unique experience that fostered care of the community as demonstrated in the following student's reflection.

Although disturbing at times, this experience was a positive one. It allowed me to expand my sights and awareness, learn to make less take me further, open my mind to less fortunate individuals, and care more about my community. It was so upsetting to see people live without some of the most basic things, but it was so pleasing to see how the community can be so generous in their donations.

What Did We Learn?

The ACR was not sensitive enough to measure subtle changes in attitudes over time. It represented a high level of civic mindedness at the beginning and end of the data collection. There was no significant difference between the groups on the pre or postdata collected, and both groups were very similar on these measures from the inception of the research. This similarity may be a direct result of some students' previous experiences in the community, volunteering at physical therapy sites as they applied to various schools for acceptance. For other students, service may already have been an integral part of their lifestyle. However, positive outcomes for the service-learning group emerged through a qualitative design. This research fostered interesting discussions on how best to capture the implicit and explicit experiences of service-learning experiences unique to PT students.

Since 1995, increasing numbers of health professions programs have incorporated service learning into their curricula.^{4,9} While numerous studies have assessed the benefits of service learning for students in undergraduate programs, minimal research has examined its effects in graduate health care education. Further, outcomes assessment in service learning for graduate PT students and PT education programs have been scant in research literature.

Village and Village⁹ conducted a 5-year survey of 178 graduate PT students enrolled in a 2-semester course on geriatric physical therapy. In addition to 30 hours spent in the classroom, students working in instructor-chosen pairs spent approximately 45 minutes per week screening geriatric physical therapy patients/clients with balance deficits. As with other studies, all students were given the op-

portunity to participate in verbal and written reflection. The researchers found that, of the students surveyed, 95% reported some personal and/or professional benefits, and 89% reported feeling that their patients/clients had also benefited from the services provided. Students' reflections also revealed personal development in the areas of empathy for and awareness of the needs of geriatric patients/clients. However, the evaluation survey was not able to detect attitude changes as a result of the student's experiences or identify the specific benefits gained from the project.

Beling⁴ conducted a semester-long study of 40 students in an MPT-level geriatric rehabilitation course. One half of the class became an experimental group, while the other half served as a control group. The experimental group participants were required to complete 32 hours of service learning, including reflection and preparation, in addition to the regular coursework; students in the control group were required only to complete the basic requirements of the course. Both groups of students completed the Facts on Aging Quiz I and the Watson-Glaser Critical Thinking Appraisal before and after the semester. The researcher found that students participating in service learning not only developed personal relationships that helped them improve their attitudes towards geriatric patients/clients, but they also improved their knowledge about geriatric physical therapy issues. However, the results failed to capture changes in students' critical thinking.

Although recent research demonstrates that community-based education is increasingly being used in PT education programs,^{4,5,7,8} challenges identified in the previous service-learning studies reveal the need for better evaluation strategies for service learning. Effective qualitative and quantitative measurements must be identified to accurately assess the outcomes of such research.

Strategies for Assessment

Domains of Service Learning. In order to design a thorough and useful assessment strategy, the parameters or domains of service learning should be fully understood. A successful service-learning program engages 4 independent, yet interwoven, components: students, faculty, institution, and community. Students, as the first group of constituents, are central to service learning. They are key to the success of the program and are among the primary beneficiaries of this type of pedagogy. It is key to assess the impact of service learning on students in order to learn what benefits that they receive and to

learn why it is important to include this type of experience in the curriculum.¹⁰ Faculty, on the other hand, are responsible for facilitating reflection, drawing connections between experience in the community and course material, and placing students in appropriate sites within the community.¹⁰ In addition to faculty support, institutional commitment is crucial to the success of a service-learning program. Institutions provide the foundational framework for each department to participate and provide consistency across different service-learning programs within the school.¹⁰ Finally, the community partners participate as a vital constituent of any service-learning program. They graciously host and share responsibilities for student learning within their organizations, so it is imperative to understand both the detrimental and beneficial effects these relationships may have.¹⁰

Methods of Assessing Service Learning in Different Domains. Many different strategies are available for assessing the impact of service learning on the student population. Gelmon and colleagues¹⁰ suggest that in order to be sensitive to different aspects of service learning—such as awareness of the community, involvement in the community, commitment to service, sensitivity to diversity, and so on—assessment must include a variety of methods to collect a broad range of information. Focused interviews with the students are advantageous for providing data within the context of the student’s experience.¹⁰ Gelmon and colleagues¹⁰ also suggest the use of focus groups with students as a way to share what they have learned with their peers and an opportunity to reflect upon lessons they may have learned from their experience. Acknowledging that students do not all learn in the same way or necessarily communicate well using the same method, an assessment plan should include a variety of tools. Thus, verbal communication is one means, and journal writing can also be useful as an evaluation tool. This method of assessment allows students to organize and clarify their thought processes and then apply their ideas in writing to the concepts they have learned.¹¹ In addition to these very rich sources of qualitative information, surveys can provide quantitative data and are relatively simple to analyze in order to draw conclusions (Table 1). Surveys such as the End of Program Student Service-Learning Survey, prepared by Shinnamon, Gelmon, and Holland¹² for the Health Profession Schools in Service to the Nation, can be used to gather useful quantitative data. This particular survey can be easily analyzed using SPSS* and statistical tools such as descriptive statistics, chi-square analysis, or analysis of vari-

Table 1. Types of Surveys for Assessment²⁵

Students	Faculty	Community Partners
End of Program Survey for Students–Shinnamon, Gelmon, & Holland (1999)	End of Program Survey for Faculty–Shinnamon, Gelmon, & Holland (1999)	End of Program Survey for Community Partners–Shinnamon, Gelmon, & Holland (1999)
Community-Based Learning Student Survey–Gelmon, et al (2001)	Community-Based Learning Faculty Survey–Gelmon, et al (2001)	Community-Based Learning Community Partner Survey–Gelmon, et al (2001)
Volunteer Functions Inventory–Clary, et al (1998)*		
Community Service Self-Efficacy Scale–Reeb, et al (1998)*		
Civic Action- Moely, et al (2002)*		
Community Service Involvement Preference Inventory–Payne & Scott (1993)*		
Community Service Attitudes Scale–Shiarella, McCarthy, & Tucker (2000)*		

*Compiled from: Bringle RG, Phillips MA, Hudson M. *The Measure of Service Learning: Research Scales to Assess Student Experiences*. Washington DC: American Psychological Association; 2004.

ance (ANOVA). A number of surveys are designed to measure different aspects of service learning, such as students’ motivations for participating in service learning, student confidence in community contributions, or the students’ intentions to participate in future community service activities, among many others.¹³

However, each of these methods for assessing the student population has its limitations. In responses to survey questions, for example, students are not given the freedom to express their “voice” or share the context of their experiences. Respondents are usually limited to answering specific questions, and there are inherent biases that are difficult to control in surveys.¹⁰ While they allow for the students to tell stories about their experiences and give context to their answers, interviews are labor-intensive to analyze and are difficult to code with high interrater reliability. Focus groups should be carefully assembled to get a useful mix of opinions and experiences. Since they require a group of students to convene in one location at a specified time, schedules can be difficult to coordinate. Like interviews, focus groups yield qualitative data, but it also can be labor-intensive to code group sessions and difficult to analyze results with high interrater reliability.¹⁰ Therefore, these various forms of student assessment have both positive and negative aspects to consider (Tables 2 & 3).

As with students, the impact of service learning on faculty can be assessed in many different ways. Since assessment plans depend on a mix of strategies to assure that data collection is broad and varied enough to result in sound conclusions, Gelmon suggests that a combination of assessment tools be used in order to gather both qualitative and quantitative data.¹⁰ Similar to assessment of students’ experiences, a survey can be used to assess changes in faculty attitudes by utilizing a pretest/posttest format.¹⁰ Shinnamon, Gelmon, and Holland¹² also generated a Faculty Assessment Survey akin to the Student Assessment Survey that can be analyzed in a similar fashion. However, problems may arise when the posttest survey is given after only 1 semester of teaching the service-learning curriculum; more than 1 semester might be necessary to see a true change in attitude.

Another tool useful in assessing the faculty experience is the focused interview. Interviews allow the faculty members an opportunity to provide feedback or input for the improvement of the program after they have experienced teaching a service-learning course within their curriculum. Information gathered from faculty interviews can be used collectively to assess the campus-wide impact of service-learning programs within different departments or settings.¹⁰ This information is often rich with opinions and classroom experiences since faculty members are usu-

Table 2. Advantages of Assessment

Method of Assessment	Students	Faculty	Institution	Community
Survey	1. Easy to analyze 2. Quantitative data	1. Easy to analyze 2. Quantitative data	—	1. Easy to analyze 2. Quantitative data
Interview	1. Provides opportunities for explanation of answers	1. Can provide feedback 2. Can assess campus-wide impact	1. Can interview people at different levels to discern impact	1. Opportunity to provide context for answers
Focus Group	1. Share experiences with peers 2. Reflection on what was learned	—	—	1. Opportunity to provide context for answers
Journals	1. Clarify thought processes 2. Apply ideas to concepts learned	1. Reflect on experiences	—	—
Observation	—	1. Provide feedback 2. Provide guidance for formation of service-learning curriculum	—	1. Observe the impact on the community partner
Analysis of Published Documents	—	—	1. Show the impact of service learning on the institution	—

ally practiced in verbal communication and reflection. With these characteristics, faculty members can articulate useful information, but these same characteristics could make analysis cumbersome. The disadvantages connected to faculty interviews should be kept in mind, such as the difficulty of keeping these interviews consistent between each faculty member. In addition, all faculty interviews should be kept confidential.¹⁰

Classroom observations might also be a useful tool for assessing faculty in service-learning programs. Through observation of the interactions within the classroom and ways in which reflection helps students see connections, an outside member of the program can provide feedback for the faculty, as well as guidance for planning improvements for the service-learning program.¹⁰ This process can be time-consuming for the faculty and those people chosen to observe them. The observers should also possess special skills and knowledge of both the program and the goals of service learning in order to make pertinent assessments of the faculty member. Finally, many faculty members may not be comfortable having a critical observer in their classrooms because they may feel a great deal of pressure to perform and the observer could become intrusive to the classroom setting.¹⁰ Faculty members could also keep journals in which to record and reflect on their experiences; however, maintaining regular entries in a journal might be difficult to enforce due to the busy schedules

of the faculty members. Since the journals must also remain anonymous, personal or identifying information of the faculty members ought to be eliminated from the journal.¹⁰

The involvement of community partners is fundamental to a service-learning program. Without their willingness to integrate students within their organizations and adopt and share in the goals of service learning, the experience may lack essential outcomes for all constituencies. Assessment of the impact of a service-learning program on community groups, therefore, is very important. However, in designing this component of the assessment plan, it is important to be mindful of the community partner's time and resources when performing an assessment.¹⁰ Surveys might be the easiest for busy people to complete and can be crafted to glean useful information. One such example is the Community Partner Assessment developed by Shinnamon, Gelmon, and Holland¹² for use at the end of a service-learning program. This survey, like the equivalent student and faculty surveys, can be analyzed through SPSS and various statistical tools to yield quantitative data on the impact of service learning on community partners.¹⁰ Observations of the kinds of activities in which students are engaged, interviews with the recipients of service and an organization's staff, and focus groups with community partners are all useful means to assess the impact of service learning on the community.

An assessment of the educational institution's role in service learning can be implemented in a different format than assessment of the other domains. Table 3 presents the advantages of various assessment strategies in 4 domains affected by service learning. Interviews with a variety of constituents within the institution can be useful in gauging the impact at different levels of this complex structure.¹⁰ Reviewing (or compiling one if it does not yet exist) an inventory of service-learning courses and participants can reveal patterns and comparisons and become a source of models for developing service-learning programs. Another useful means of assessing service learning at the institutional level is the analysis of documents that already exist and have been published by the institution. These can provide a wealth of knowledge about the impact service learning can have on the institution and its constituents¹⁰ and can hint at how the institution views the service-learning program.

DISCUSSION AND CONCLUSION

Our educational mission is to address issues of diversity, cultural competence, and individual perceptions of quality of life. Students may not appreciate the complexity of these topics through the classroom only, especially if the classroom lacks diversity. Service learning provides a context for faculty to connect students with various populations, providing them with experiences that assist them in constructing a more robust understanding of

Table 3. Disadvantages in 4 Domains of Assessment

Methods of Assessment	Students	Faculty	Institution	Community
Surveys	<ol style="list-style-type: none"> 1. No freedom to express individual voice 2. Unable to share context of experiences 3. Biases that are difficult to control 	<ol style="list-style-type: none"> 1. If posttest is given too soon, may not have enough time between to analyze any change 	—	<ol style="list-style-type: none"> 1. Unable to share context for answers 2. Difficult to control biases 3. Must be mindful of community partners' time
Interviews	<ol style="list-style-type: none"> 1. Labor-intensive to analyze 2. Difficult to code with high interrater reliability 	<ol style="list-style-type: none"> 1. Consistency between interviews of faculty members is difficult to maintain 2. Confidentiality is difficult to maintain 	<ol style="list-style-type: none"> 1. Labor-intensive to analyze 2. Difficult to maintain consistency 3. Difficult to maintain high interrater reliability 	<ol style="list-style-type: none"> 1. Labor-intensive to analyze 2. Difficult to code with high interrater reliability 3. Time-consuming for community partner
Focus Group	<ol style="list-style-type: none"> 1. Difficult to assemble due to schedule conflicts of many people 2. Labor-intensive to analyze 3. Difficult to code with high interrater reliability 	—	—	<ol style="list-style-type: none"> 1. Labor-intensive to analyze 2. Difficult to code with high interrater reliability 3. Time-consuming for community partner
Journals	<ol style="list-style-type: none"> 1. Difficult to enforce maintenance of journal 2. Difficult to code with high interrater reliability 	<ol style="list-style-type: none"> 1. Maintenance of journals difficult to enforce due to busy schedules 2. Difficult to eliminate identifying information 	—	—
Observation	—	<ol style="list-style-type: none"> 1. Time-consuming for faculty 2. Might make faculty member feel uncomfortable 3. Observer may be intrusive to classroom setting and disrupt the normal flow of classroom experience 	—	<ol style="list-style-type: none"> 1. Observer may be intrusive 2. Time-consuming for community partner
Analysis of Published Documents	—	—	<ol style="list-style-type: none"> 1. Might be difficult to find/gain access to documents pertaining to service-learning impact 	—

people who may be very different from themselves.

The challenge we are faced with is the ability to measure many of the intangible learning experiences that may be gleaned from service learning. Qualitative analysis of data illuminates specific outcomes that can result from direct service-learning experiences. More quantitative measures sensitive to change over time, as the measures relate to the experience, are necessary for future research in graduate service-learning programs. As more health professions education

programs incorporate service learning throughout graduate PT education program curricula, more sensitive instruments for quantitative analysis need to be developed. Combining quantitative and qualitative analysis in future service-learning studies will benefit outcomes research in this exciting and developing area.

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