

## Meaningful Measurement of Theory-Based Service-Learning Outcomes: Making the Case with Quantitative Research

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*Research is most beneficial when the design of research is guided by a theory and when the information that is gained through data collection is relevant to supporting, developing, refining, and revising a theory. The practice of service-learning will be improved when we understand the conditions that increase the likelihood of service-learning classes reaching intended educational outcomes. This article provides recommendations for generating meaningful information about service-learning that include evaluating hypotheses derived from theory, using multiple-item measures of theoretical constructs, using designs that allow causal inferences to be made, and making appropriate theoretical and practical generalizations from research.*

The growth in the number of service-learning classes in higher education during the 1990s has been a remarkable example of pervasive educational reform. This expansion, however, is somewhat paradoxical because educators and administrators have invested time and resources developing service-learning courses and campus infrastructure when there is a paucity of research evidence documenting the effectiveness of service-learning in reaching educational objectives of the course, the curriculum, and the institutional mission. The increase in the number of service-learning courses without supporting evidence is all the more remarkable because it has occurred during a decade that has witnessed increased emphasis on assessment and accountability in higher education.

This article advocates that service-learning practitioners must devote more resources to conducting systematic, scientific assessment of service-learning outcomes across students, faculty, institutions, and communities. Conducting systematic scientific research with meaningful indicators of educational outcomes represents a public, peer-reviewed, and replicable type of information gathering that is important for increasing confidence among practitioners, providing a justification to those in positions to support the expansion and recognition of service-learning, and developing theory to enhance our understanding of practice.

The acute need for research on service-learning has not gone unnoticed. Wingspread conferences were conducted in 1991 and 1993 to develop a research agenda for service-learning. More recently, Giles and Eyler (1998), the Research Advisory Council convened by Campus Compact during

1997-1998, and the Campus Compact Presidents' Declaration on the Civic Responsibility of Higher Education provide a set of issues, topics, and questions for research. However, there has been limited guidance on how to conduct rigorous quantitative and qualitative research on service-learning through examples in the literature, graduate student training, professional development, and collaboration with researchers in cognate areas.

Reflective practitioners need to assess their practice in a manner that is structured, systematic, and meaningful (Hatcher & Bringle, 1997). Cambridge (1999) defines assessment as "generating and using information about performance that is fed back into the system from which it comes to improve that system" (p. 176). There are five important types of assessment (reflection, process evaluation or monitoring, outcome evaluation, correlation, and experiment) that are particularly relevant to providing feedback to educators to improve practice (see Table 1). In general, reflection and monitoring are more qualitative methods of assessment; correlational and experimental methods are more quantitative.

A number of factors shape when each of these different assessment approaches is preferred. First, the nature of the question being asked and answered can guide the type of assessment method that is selected. Some questions are better suited to qualitative methods (e.g., "How are my students reacting to their first day of community service?"), whereas others benefit from the use of quantitative methods (e.g., "How does the perceived efficacy of students in service-learning classes compare to students in traditional classes?"). Second, use of the information is important in guiding the selection of the method of assess-