Designing Effective Reflection: What Matters to Service-Learning?

Julie A. Hatcher, Robert G. Bringle, and **Richard Muthiah**
Indiana University-Purdue University Indianapolis

A multi-campus research survey of undergraduate students enrolled in service-learning courses asked students to describe how the service-learning course was designed in terms of the degree of integration of the learning and service component, the nature of the reflection activities, and the quality of the learning experience. Results indicated that the degree of integration of academic content with the service experience and the nature of the reflection activities were significant correlates of course quality. Three characteristics of reflection that each independently predicted course quality were (a) reflection activities that clarified personal values, (b) reflection activities that were a regular part of the course, and (c) reflection activities that were structured with clear guidelines and directions. Implications for service-learning educators are discussed.

Documenting student learning outcomes is critical to generating and sustaining support and acceptance for service-learning as an effective undergraduate pedagogy. A growing body of research has documented a wide range of important outcomes. Students who participate in service-learning report increased interaction with faculty and peers (Astin & Sax, 1998; Eyler, Giles, & Braxton, 1997), greater relevance of coursework to career clarification (Keen & Keen 1998; Vogelgesang & Astin, 2000), stronger commitment to social responsibility and future volunteering (Astin & Sax; Gray, Ondaatje, & Zakaras, 1999; Markus, Howard, & King, 1993; Perry & Katula, 2001), improved learning (Astin & Sax; Eyler & Giles, 1999; Markus, Howard, & King), improved ability to think critically about complex problems (Batchelder & Root, 1994; Eyler & Giles), increased racial understanding and tolerance (Vogelgesang & Astin), and greater satisfaction with the learning experience (Gray et al., 1998) than undergraduates who do not participate in service or service-learning courses.

Research that supports the *acceptance* of service-learning in higher education is the foundation for additional research that can clarify and improve the *understanding and practice* of service-learning. To date, far too little is known about what works best, what works best for whom, and which components of service-learning course design and implementation result in particular student learning outcomes (Eyler & Giles, 1999). Principles of good practice have been offered to guide the integration of service into academic study (e.g., Howard, 1993; Jacoby, 1996; Porter-Honnet & Poulsen, 1989); however, a set of principles provides only minimal

guidance about how an individual faculty member translates a particular principle into good practice. Should the service component in the course be required or optional? Does it make a difference if students participate in the service experience on their own, with peers, or with the instructor? And, the research question this study addresses: in what ways should reflection activities be designed to optimize the quality of the learning experiences for undergraduates?

There is converging evidence from multiple disciplinary perspectives on the qualities of good learning environments for undergraduates (Marchese, 1997). Tinto (1993) and Pascarella and Terenzini (1991) confirmed the importance of academic and social integration, demonstrated in part by relationships with peers, interaction with faculty, and involvement in active learning. Chickering and Gamson (1987) implicitly referred to these issues in the "Seven Principles for Good Practice in Undergraduate Education:" good practice encourages contact between students and faculty, develops cooperation among students, uses active learning techniques, gives prompt feedback, emphasizes time on task, communicates high expectations, and values diverse ways of learning. Many of these principles are evident in sound service-learning practice (Hatcher, 1997). Service-learning students are likely to (a) have increased contact with faculty (Eyler & Giles, 1999), (b) interact, if not collaborate, with one or more classmates as they provide service (Eyler & Giles), (c) engage in active learning in their service activity and reflection activities, and (d) receive feedback from the site supervisor and course instructor.

The few research studies to date that have exam-

ined the relationship of service-learning course components to the quality of the learning experience suggest characteristics of the service-learning class matter to student learning outcomes (Batchelder & Root, 1994; Eyler & Giles, 1999; Mabry, 1998). One of the most important components of a service-learning class is the amount and type of reflection activities that are used to connect the service experience to the learning objectives of the course (Eyler, 2001). Reflection is the "intentional consideration of an experience in light of particular learning objectives" (Hatcher & Bringle, 1997, p. 153). Reflection activities direct the student's attention to new interpretations of events. Through reflection, the community service can be studied and interpreted, much like a text is read and studied for deeper understanding. When reflection activities engage the learner in examining and analyzing the relationship between relevant, meaningful service and the interpretative template of a discipline, there is enormous potential for learning to broaden and deepen along academic, social, moral, personal, and civic dimensions. Reflection has been found to have a positive impact on moral development (Boss, 1994), strengthen critical thinking that supports complex problem solving (Eyler & Giles, 1999), and foster a broader understanding of the beneficiaries of the service (Greene & Diehm, 1995).

Mabry (1998) assessed how specific student learning outcomes (i.e., personal social values, civic attitudes) were related to course variables (i.e., amount and kind of contact with service beneficiaries, frequency of reflection activities, variety of written reflection activities) in service-learning courses. Students completed pre- and post-test surveys on values and attitudes. The post-test survey included questions on the descriptive attributes of the service component and reflection activities. Results from this study suggested that service-learning had a positive outcome on values and attitudes when students contributed at least 15-20 hours of service, had frequent contact with the beneficiaries of their service, participated in weekly in-class reflection, completed ongoing and summative written reflection activities, and discussed their service experience with the instructor and community site supervisor. The number of written reflection activities was not associated with student outcomes. However, when students participated in both a form of ongoing reflection (i.e., journaling) and summative reflection (e.g., final paper, report, presentation), they demonstrated higher gains in personal social values and civic attitudes than students who participated in only one type of reflection activity. In-class reflection was found to be

especially important to academic learning resulting from service experiences. Mabry points out that "the results of this study can help us focus our pedagogical practices and better specify theoretical models and best practices" (p. 42), and yet, "since the data in this study provide no specific information on the nature of students' reflection assignments...instructors should look to carefully articulated theoretical models of service-learning pedagogy and recommendations for best practices for guidance" (p. 43).

This research study responds to Mabry's (1998) observation that it is important to more closely examine the nature of students' reflection activities, by empirically evaluating principles of good reflection. There are at least two models that contain guidelines for designing reflection activities in service-learning classes. Eyler and Giles (1999) have presented a framework that includes five characteristics of good reflection activities. Identified as the 5 Cs, these include (a) connection between experience and knowledge; (b) continuity of reflection before, during, and after the service experience; (c) context of applying subject matter to real life situations; (d) challenging students' perspectives; and (e) coaching and providing emotional support to students (Mills, 2001). Bringle and Hatcher (1999) offer a second set of guidelines for designing effective reflection in service-learning classes, by positing that reflection activities should (a) clearly link the service experience to the course content and learning objectives; (b) be structured in terms of description, expectations, and the criteria for assessing the activity; (c) occur regularly during the semester so that students can develop the capacity to engage in deeper and broader examination of issues; (d) provide feedback from the instructor so that students learn how to improve their critical analysis and reflective practice; and (e) include the opportunity for students to explore, clarify, and alter their personal values. These two sets of guidelines for reflection are similar in that both emphasize the need for regularity, connecting reflection to the course content, providing feedback and coaching, and challenging the clarification of values. Structuring reflection with clear expectations and criteria for assessment is a distinctive aspect of the Bringle and Hatcher guidelines.

In addition to providing guidelines for designing and implementing reflection activities in a service-learning course, these two sets of guidelines also articulate conceptual frameworks that can be evaluated. Neither of them, however, has been empirically evaluated to determine its relevance to outcomes in service-learning classes. The goal of this research was to determine if reflection is important

to the quality of the learning experience and to evaluate how (a) structure, (b) regularity, and (c) clarification of values are each related to the quality of the learning experience for students in service-learning classes. In contrast to the specific personal social values and civic attitudes measured in Mabry's (1998) research, this research studied the quality of the learning experience. The quality of the learning experience is a global, multidimensional assessment of the students' educational experience that includes attributes (i.e., active learning, course satisfaction, faculty interaction, peer interaction, perceived learning, personal relevance of the course) that are known to enhance learning (Chickering & Gamson, 1987; Kuh, 2001a, 2001b; Marchese, 1997; Pascarella & Terenzini, 1991; Tinton, 1993) and, therefore, extends the scope of outcomes variables beyond previous research.

Methods

Respondents

Questionnaires were completed by 471 undergraduate students enrolled in 17 service-learning classes on nine campuses. Participant data were collected from thirteen 100-level courses, three 200-level courses, and one 300-level course. Faculty who taught the courses represented in this study were identified through a statewide network, Indiana Campus Compact. Courses included Construction Technology, Education, Liberal Arts (Sociology, Spanish), Science (Biology, Environmental Science, Geology, Psychology), and Social Work. Not all participants provided complete demographic information; of those who completed demographic information, 91 males (19.3%) and 322 females (68.4%) participated in the study. The mean age of participants was 19.53 (SD = 3.56). Three hundred and ninety-one participants were Caucasian (83.0%), and others included African-American (2.0%), Hispanic (1.0%), and other (1.0%) (13.0% did not respond). Two hundred and seventy-one participants were college freshman (58%), 82 sophomores (17%), 38 juniors (8%), and 20 seniors (4%) (12.7% did not respond).

Questionnaires

Questionnaires were distributed at the end of the semester to undergraduates enrolled in service-learning courses. Instructors were provided with a protocol for distributing and collecting surveys. Part one of the questionnaire contained multi-item indices of the degree to which the course demonstrated the following constructs: active learning, course satisfaction, faculty interaction, peer interaction, perceived learning, and personal relevance.[1] Respondents answered on a 5-point response scale using a strongly agree to strongly disagree response format. Each of the multi-item measures had coefficient alphas greater than .80 with the exception of active learning (alpha = .62): course satisfaction (alpha = .85), faculty interaction (alpha = .82), peer interaction (alpha = .86), perceived learning (alpha = .84), personal relevance (alpha = .81). A composite index of the quality of the learning environment of the course (alpha = .89) was based on combining items that measured active learning, course satisfaction, faculty interaction, peer interaction, perceived learning, and personal relevance of the course. This composite index reflects qualities that are known to support good undergraduate learning (Bonwell & Sutherland, 1996; Marchese, 1997; Terenzini & Pascarella, 1994).

Part two of the questionnaire asked respondents to describe qualities of the service-learning class, using a 5-point response scale using a strongly agree to strongly disagree response format. Two items asking about integration of academic content with the service experience ["The academic course material (e.g., readings, lectures) was useful for the service I performed," "The service experience increased my understanding of the academic course material"] had an alpha of .76. Based on the analysis of reflection by Bringle and Hatcher (1999), three items asked about the qualities of the reflection activities in the service-learning course: "The reflection activities were *structured* with clear directions and guidelines," "Reflection activities were a *regular part* of this course," and "The reflection activities in this class allowed me to *explore and clarify my personal values*." As a three-item composite of the nature of reflection, the alpha was .82. Two single items asked about the quantity of reflection in terms of time and written work: "During a typical week, approximately how many hours per week did you spend completing assigned reflection activities on your service experience," and "Estimate the total number of pages of typewritten reflection activities (e.g., journal entries, papers, log sheets) you will complete in this class."

Results

A multiple regression was conducted with quality of the learning environment of the course (a composite index based on combining items that measured active learning, course satisfaction, faculty interaction, peer interaction, perceived learning, and personal relevance of the course) as the dependent variable. Two predictor variables were entered in a stepwise regression: (a) integration of academic content with the service experience and (b) the nature of reflection activities (a composite index based on combining items that measured struc-

ture, regularity, and clarification of values). In descending order of significance, both of the variables significantly predicted the quality of the learning environment in service-learning classes: integration of academic content with the service experience, $F(1, 468) = 272.61$, $p < .01$, cumulative $R = .61$, beta = .61, and the nature of reflection, $F(2, 467) = 223.54$, $p < .01$, cumulative $R = .70$, beta = .40.

A second stepwise multiple regression was conducted to explore how the nature of reflection was related to the quality of the learning environment of the course. The quality of the course was the dependent variable and three descriptive items on reflection (i.e., reflection was structured, reflection was regular, reflection allowed for the clarification of values) were entered as separate predictor variables. All three characteristics of reflection were significant predictors of the quality of the learning environment of the course: reflection allowed clarification of values, $F(1, 466) = 236.27$, $p < .01$, cumulative $R = .58$, beta = .58; reflection was regular, $F(2, 465) = 145.12$, $p < .01$, cumulative $R = .62$, beta = .27; and reflection was structured, $F(3, 464) = 101.27$, $p < .01$, cumulative $R = .63$, beta = .15. When the number of hours and the total pages of written reflection were added to the regression, they did not significantly predict any additional variance in the quality of the learning environment (see Table 1 for correlations).

Discussion

There is tremendous variability in the nature and quality of service-learning courses that have been developed across the spectrum of higher education (Eyler & Giles, 1999; Ikeda, 2000). This research addressed two fundamental questions related to this variability: Can the quality of the learning environment in service-learning classes be measured? Are there aspects of service-learning classes that are related to the variability in quality?

Quality of the Learning Environment

In the absence of having an independent measurement of student learning, the next best outcome is to measure qualities of the learning environment that have been identified as producing good learning. Individual components from the literature and included in this research (i.e., active learning, course satisfaction, faculty interaction, peer interaction, perceived learning, personal relevance) were found to have coherence as a subjective student appraisal of the quality of the learning environment. Although there may be additional qualities that can be identified, these dimensions are critical to learning, and their conceptual breadth and ties to past research provide a basis for viewing them as a good representative set of factors reflecting quality of the learning environment. Furthermore, these qualities are not particular to service-learning classes, but can be applied to all instructional experiences at the most general level. Research on particular outcomes (e.g., critical thinking, moral development, student development; see Bringle, Phillips, & Hudson, 2004) is important. However, the quality of the learning environment is a core issue related to academic outcomes on which subsequent research on service-learning can focus (copies of the items that constitute this measure are available from the authors).

Service-Learning and the Quality of the Learning

Table 1

Means, Standard Deviations, and Zero-Order Correlations for Variables in Multiple Regression Analyses.

	Mean	SD	1	2	3	4	5	6	7	8
Quality of Learning Experience (1)	3.88	.55	—							
Integration of Academic Content with the Service Experience (2)	3.95	.73	.61**	—						
Nature of Reflection Activities (3)	4.11	.73	.60**	.48**	—					
Regularity of Reflection (4)	4.18	.86	.50**	.39**	.87**	—				
Structured Reflection Activities (5)	4.16	.82	.50**	.38**	.87**	.66**	—			
Allows Clarification of Values (6)	4.02	.83	.58**	.45**	.84**	.56**	.59**	—		
Hours Spent on Reflection (7)	2.00	2.27	.01**	-.03	.05	-.01	.04	.09	—	
Total Number of Pages of Written Reflection (8)	12.21	10.66	.20**	.13**	.31**	.30**	.24**	.25**	.10*	—

** Correlation is significant at the 0.01 level (two-tailed).
* Correlation is significant at the 0.05 level (two-tailed).

Environment

This research supports four characteristics as being significant in differentiating service-learning classes in terms of the quality of the learning environment that results for students. The finding that the integration of academic content with the service experience was the most significant correlate confirms the importance of this core issue from the student's perspective. This characteristic is the bedrock of the definition of service-learning (Bringle & Hatcher, 1995) and is evident in recommendations for good practice (Howard, 1993; Porter-Honnet & Poulsen, 1989). Students who scored lower on this composite measure were indicating that they felt there was a lack of relevance of the course to the service setting and a lack of relevance of the community service to the learning that was taking place in the course. It is significant that students were providing these characterizations and acknowledging that the lack of integration was associated with deficiencies in qualities associated with good instruction. It is also significant that this was a strong degree of association. Instructors who design service-learning courses need to ensure that the service is not merely added to a course as another assignment, but that the service is a meaningful and a well-integrated part of the overall course design for which there is a clear pedagogical rationale.

The results provide the first empirical support for any model of reflection. These results also support the importance of the nature of reflection and confirm three of the five characteristics of reflection that were identified by Bringle and Hatcher (Bringle & Hatcher, 1999; Hatcher & Bringle 1997). Specifically, reflection that is structured, regular, and clarifies values *independently* contributed to the quality of the educational experience for students. These results indicate that each of these qualities is important, and that good reflection activities that contain all three qualities will be even more effective than if they contain only one. However, there are many ways in which reflection activities can be structured, clarify values, and regularly distributed across a semester. Subsequent research can clarify the underlying nuances for each of these characteristics. Furthermore, the results confirm that the nature of reflection was more important to the quality of the learning environment than was the quantity of reflection. The finding that more reflection was not better for factors favoring learning is consistent with Mabry's (1998) research that showed that quantity of reflection was not related to specific civic attitudes and personal social values.

Implications for Practice

Confirmation of three of the five guidelines identified by Bringle and Hatcher (1999) is not only conceptually important but also of practical importance to recommendations for designing reflection activities. The finding that reflection activities should clarify values suggests that reflection activities should help students not only process the course material but also their personal values, civic attitudes, goals, and intentions. Service-learning experiences often introduce students to new environments and experiences that cross cultural and socioeconomic boundaries. Students may interact with others who challenge previously held stereotypes and values. Such experiences can create perplexity for students, and perplexity is often the beginning point for learning to occur (Dewey, 1933). This perplexity, however, is the very reason why reflection activities should provide students with the opportunity to clarify and critically evaluate personal values, and further develop values and attitudes based upon new knowledge and experience.

Written assignments asking students to analyze their service experience in relation to their values, attitudes, goals, and intentions can be very powerful ways to help students analyze and clarify values. Engaging in reflection that clarifies personal values is not necessarily a task accomplished individually; small group activities and collaborative work can create meaningful dialogues that promote the clarification of values. Regardless of the form of the reflection activity, instructors need to be willing to ask students about their personal lessons and obstacles to service, so that the perplexities in the service setting challenge and clarify existing values. Ethical case studies (Lisman, 1995) and readings that have been selected because they raise particular issues about values in a community service setting may be particularly appropriate.

In addition to clarifying values, evidence that regular reflection was also associated with good learning environments suggests that students benefit from repeated, rather than isolated, opportunities to connect community service to the course content. This suggests that asking students to only provide a final reflection product (e.g., cumulative journal, class presentation, final paper) at the end of the semester runs the risk of narrowing opportunities for the student to practice and learn from the service experience. Distributing the same level of effort across the semester (e.g., journals that are kept regularly and turned in periodically; several mini-papers) seems advantageous to student outcomes. The value added by engaging in regular reflection may be due to the rhythm of reflection that is established, or because students gain deeper

understanding from repeating the practice of reflection. In either case, regular reflection probably results in the development of reflection that is educationally more meaningful. If reflection is a learned skill, then engaging in reflection repeatedly benefits from practice and, presumably, from regular feedback (Ash & Clayton, in press) Although not directly evaluated in this research, the finding about regularity also suggests that a variety of types of reflection activities that allow students multiple modalities (e.g., written products, artistic expression, class discussions, electronic discussions) through which they can practice reflection might be more advantageous than using only one reflection method (see Mabry, 1998).

The finding that structured reflection activities were also associated with better course quality supports the recommendation that reflection activities be designed with a clear idea of the targeted educational goal and how the reflection activity contributes to student progress towards that goal. This is consistent with constructivist learning theory that contends that behavioral activity promotes meaningful learning, but "instead of behavioral activity per se, the kind of activity that really promotes meaningful learning is cognitive activity" (Mayer, 2004, p. 17). Thus, structured thinking about the behavior is what leads to meaningful learning experiences over and above simply engaging in the service behavior. Communicating these expectations in the syllabus, assignment, and assessment rubrics that will be used (if formal feedback is assigned) will help structure reflection for students (Ash & Clayton, in press). This suggests that asking students to keep open-ended journals, without providing guidance about their content, runs the risk of not developing good reflective skills and good learning. Three-part journals, which request a description of the service experience, an analysis of the service experience (connecting the service to the course content), and application (connecting the service to the student's values and attitudes) provide more structure than free-write journals. Another journal technique that is more structured than open-ended journal writing is keyword journals, in which a list of terms from the text and lecture is provided and students must integrate these terms into the journal entries. Directed readings can also structure reflection, by asking students to comment specifically about a portion of the text and then identify how the reading relates to their experiences at the service site (Bringle & Hatcher, 1999). A majority of students in this research came from 100-level courses. Although not evaluated in this research, an emphasis on structured reflection may be more important for students with limited experience in connecting service to academic content than

is needed for students with extensive experience in community-based learning.

Limitations

This study evaluated only three of the five guidelines recommended by Bringle and Hatcher (1999). Future research needs to evaluate the importance of the other two guidelines (reflection activities clearly link the service experience to the course content and learning objectives, and reflection activities provide feedback from the instructor so that students learn how to improve their critical analysis and reflective practice). Although this research did confirm at the general level the importance of integrating the service component with the academic work in the course and the importance of reflection, the study did not specifically address the role of reflection in linking service and academic study.

This research was based only on student feedback through surveys distributed in classes at the end of the semester, prior to final grades. Gathering information from instructors about specific reflection activities and the degree to which the instructors conform to these guidelines (i.e., clearly link the service to learning objective, regular, structured, clarifying values, allowing feedback and assessment) will further clarify the importance of these characteristics. Furthermore, independent assessment of the degree to which reflection activities meet the criteria for good reflection would be another important research method to yield a broader understanding of implications of the design of reflection activities on the quality of the learning experience. Finally, students in this research provided a report of the quality of the learning environment. Obtaining an independent appraisal of demonstrated learning will extend and clarify these findings.

These results are correlational, which precludes positing causal relationships. Thus, the findings only indicate that integration of academic content and the service experience and the three qualities of reflection were associated with descriptions that the course contained qualities of a good learning environment. The results do not justify concluding that these characteristics resulted in better learning. Faculty members who design well-integrated service-learning courses and pay close attention to the design and implementation of reflection activities are probably the same instructors who devote attention to other parts of course design and implementation. However, the unit of analysis was not the course but rather the individual student. Alternatively, then, students who are motivated to do well in the course may be more motivated to engage in service, complete reflection activities, perform well on examinations or other forms of assessment, and acknowledge that these

components are associated with other aspects of the learning environment. The same course that contains these motivated students who provide these descriptions could also include unmotivated students who provide contrasting descriptions. How to design service-learning courses that enhance academic, personal, and community outcomes for all students remains an important challenge for educators (Ash & Clayton, in press).

Conclusion

In addition to confirming that a high quality learning environment is associated with the integration of service and learning, this research confirmed that good reflection is regular, structured, and clarifies students' values. These results support Bringle and Hatcher's (1999) conceptual model of reflection and provide a basis for practical recommendations in designing effective reflection activities for service-learning classes.

Note

The Service Learning and Retention research project was funded with a three-year grant from Lilly Endowment to Indiana Campus Compact. Veronica Bannon provided invaluable assistance coordinating the details of survey distribution, data entry, and analysis.

[1] These items were part of a larger research study that collected additional information; this report contains analyses of only those variables relevant to the research questions being evaluated.

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Authors

JULIE A. HATCHER is associate director of the Center for Service and Learning at Indiana University-Purdue University Indianapolis and Adjunct Faculty in Philanthropic Studies. Her programmatic and research interests include service-learning, the philosophical work of John Dewey and its implications for undergraduate education, and the role of higher education in a democracy.

ROBERT G. BRINGLE is chancellor's professor of Psychology and Philanthropic Studies and Director, IUPUI Center for Service and Learning at Indiana University-Purdue University Indianapolis. His scholarly interests for service-learning, community service, and civic engagement include student and faculty attitudes, educational outcomes, institutionalization, and assessment and measurement issues. He has published *With Service in Mind: Concepts and Models for Service-Learning in Psychology* (edited with D. Duffy), *Colleges and Universities as Citizens* (edited with R. Games & E. Malloy), and *The Measure of Service Learning: Research Scales to Assess Student Experiences* (with

M. Phillips and M. Hudson).

RICHARD MUTHIAH is director of the Academic Resource Center at George Fox University in Newberg, Oregon. Previously he worked as a Project Associate for the NSSE Institute and the College Student Experiences Questionnaire (CSEQ). He also worked at the Center for Service and Learning at Indiana University-Purdue University Indianapolis (IUPUI) and in several student affairs roles at Taylor University. His dissertation focused on service learning. Other areas of interest include out-of-class contributions to student learning, program assessment, study of campus cultures, and Christ-centered thought and practice in higher education.