
Service Learning in Life-Span Developmental Psychology: Higher Exam Scores and Increased Empathy

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This article describes research conducted to evaluate the impact of service learning on exam scores and emotional empathy in a life-span development course. Service learning was 1 of 3 project options offered in the course; others included an interview project and a research paper. With the exception of the first exam, scores were significantly higher for the service-learning students compared to those who completed other projects. In addition, only the service-learning group demonstrated a significant increase in emotional empathy as measured by the Emotional Empathetic Tendency Scale (EETS; Mehrabian & Epstein, 1972). I discuss the results in terms of the relations among practical experience, reflection, and emotional empathy.

A variety of innovative experiential learning techniques enhance the educational experience of undergraduates. One technique in particular, service learning, is becoming increasingly popular among American colleges and universities (Chapman & Ferrari, 1999; Howard, 2003). Bringle and Hatcher (1995) defined service learning as a

course-based, credit-bearing educational experience in which students (a) participate in an organized service activity that meets identified community needs and (b) reflect on the service activity in such a way as to gain further understanding of course content, a broader appreciation of the discipline, and an enhanced sense of civic responsibility. (p. 112)

Researchers have addressed the impact of service learning in several studies within the past decade (see Eyler, Giles, Stenson, & Gray, 2001). Positive outcomes associated with the use of service learning in undergraduate courses include the development of personal efficacy (Astin, Sax, & Avalos, 1999; Kendrick, 1996), personal

identity (Driscoll, Holland, Gelmon, & Kerrigan, 1996), moral development (Boss, 1994; Gorman, 1994), interpersonal skills (Driscoll et al., 1996), reduced stereotyping (Astin et al., 1999), and increased social responsibility (Eyler, Giles, & Braxton, 1997; Kendrick, 1996). However, the impact of service learning on academic performance is less certain because of methodological problems, such as using course grades calculated differently for service learning students compared to students in comparison groups (Eyler, 2000; Steinke & Buresh, 2002).

In addition to these methodological issues, little information exists regarding specific service learning strategies that would be beneficial in promoting academic performance (Eyler, 2000). Some studies have suggested, however, that service learning programs with regular opportunities for reflection may have a more pronounced positive effect on both cognitive and personal outcomes (Bringle & Hatcher, 1995; Eyler & Giles, 1999; Mabry, 1998). Reflecting on service activities in light of course content may not only foster understanding of course content but may also enhance understanding of others' emotional experiences. Thus emotional empathy, or the ability to vicariously experience other's emotions, may be another positive outcome of programs that offer opportunities for reflection. Even so, emotional empathy has received little attention in the service-learning literature.

The purpose of this research was to explore students' academic performance and empathetic tendencies in relation to type of project completed in a life-span developmental psychology course. I predicted students engaged in service-learning activities with opportunities for reflection would demonstrate higher exam per-

formance and greater increases in pre- to postproject empathic tendencies, compared to students engaged in an interview or research paper project.

Method

Participants

Participants included 192 students enrolled in life-span developmental psychology, an upper level undergraduate, general education course, who completed all course requirements including four exams and a term project. In addition, a subsample of participants ($n = 67$), comprised of students enrolled in the most recently taught sections, also completed a pre- and postproject self-report measure on empathic tendencies.

Procedures and Measures

Students chose among three project options within the first two weeks of the semester. I assessed exam performance and pre- and postempathic tendency levels in relation to type of project.

Service-learning project. The service learning option required students to volunteer 2 hr a week for 12 weeks (during a 16-week semester) in an agency relevant to the course, such as a day care, preschool, retirement home, or assisted living facility. Students contacted and acquired written approval from the director of the agency of their choice. Directors monitored students' participation and verified the number of hours volunteered each week. Students wrote a 10- to 12-page paper in which they integrated lecture and text material with their practical experience, focusing on aspects of development that corresponded to concepts and research covered in class. Near the completion of the semester, students submitted their papers and gave a 10-min oral presentation to the class. Papers consisted of (a) an introduction (including a discussion of their expectations prior to beginning their service learning), (b) journal entries for each 2-hr session integrating course material with practical experience, (c) a discussion of their overall experience, and (d) time sheets signed each week by the director of the volunteer agency. I graded service-learning papers primarily on the integration of course material with practical experience. Because students volunteered in a variety of settings, I required

them to make oral presentations so they could learn from each other's experiences as well.

Interview project. This project required students to interview three individuals, each from a different stage of the life span (matched on ethnicity, gender, and socioeconomic class) regarding a relevant and specific topic of the students' choice. Students conducted a literature review of the topic, generated hypotheses, and formulated relevant interview questions. I instructed students to audio record their interviews, informing them that each should be approximately 1 hr in duration. Students wrote a 10- to 12-page paper that included a literature review, hypotheses, method, results (with brief excerpts from interviews), and discussion section. Students also gave a 10-min presentation to the class near the end of the semester. In general, I graded these projects based on the literature review, rationale for their hypotheses, quality and relevance of the interview questions, the effectiveness with which they integrated material from the literature review, their examination of the similarities and differences among the responses, and a discussion of developmental processes and limitations of their project.

Research paper. This project was a focused review of recent research regarding a specific and relevant topic of their choice. Students synthesized knowledge from 8 to 10 empirical articles from professional, peer-reviewed journals, engaged in critical evaluation, and wrote a 10- to 12-page (not including the title page, abstract, or references) paper. Students began by clarifying the topic's importance and significance to human development. I instructed students to incorporate the articles in a logical fashion and to clearly state the purpose, method, findings, and implications of each study. They also discussed important questions that remained unanswered regarding the topic, indicated why the questions need to be addressed, and concluded by setting up a specific idea for additional research based on the literature review. I graded research papers based on the relevance of the topic, content, understanding of subject matter, ability to evaluate scholarship cited, integration and synthesis of research, ability to communicate ideas, ability to use American Psychological Association style, appropriateness of the conclusion, and implications for fu-

ture research. Students also gave a 10-min presentation to the class near the end of the semester.

Exams. I evaluated students' understanding of course material based on four multiple choice exams. The presentation of course material was topically organized. The first exam covered introductory material, developmental theories, and research methods, whereas the coverage of subsequent exams included perceptual and cognitive development (Exam 2); self-concept, personality, and social relationships (Exam 3); and gender, moral development, and family relations (Exam 4). In part, the course was topically organized because of the service-learning component. That is, regardless of type of facility in which the students volunteered (e.g., day care, preschool, retirement home), all service-learning students' observations focused on issues related to the same general topics (e.g., perceptual development) within a limited time period. Because I administered the first exam before students had begun their projects, the focus of this study was primarily in group differences on subsequent exams (i.e., the average of Exams 2 to 4).

EETS. The Emotional Empathic Tendency Scale (EETS; Mehrabian & Epstein, 1972) is a 33-item self-report scale designed to measure a person's predisposition to vicariously experiencing the emotions of others. Examples of items include "It makes me sad to see a lonely stranger in a group" and "It is hard for me to see how some things upset people so much." Respondents rate each of 33 items on a 9-point scale ranging from -4 (*very strong disagreement*) to +4 (*very strong agreement*). Reliability and validity have been acceptable across a variety of studies assessing emotional tendencies (Mehrabian, Young, & Sato, 1988).

Students completed the EETS during the second week and again during the final week of class. Two research assistants, blind to the hypotheses, entered the empathy data.

Results

Project Type and Performance on Exams

An ANOVA conducted on performance on Exams 2, 3, and 4 in relation to Project Type (service learning, interview, or research paper) revealed a significant effect, $F(2, 189) = 3.81, p < .05, \eta^2 = .04$. Post hoc *t* tests revealed that scores were significantly higher for students engaged in service learning compared to those involved in either the interview project, $t(117) = 2.67, p < .01$, or the research paper, $t(146) = 1.98, p < .05$ (see Table 1). I found no significant difference between scores for students choosing the interview and research paper projects. Because students took the first exam prior to students their projects, I analyzed performance on the first exam separately. As expected, the results of this second ANOVA (conducted with the first exam scores as the dependent variable) revealed no significant effects of Project Type.

Empathic Tendency Scores

To determine the amount of change that occurred in the preproject to postproject empathy scores, I calculated difference scores and entered them into an ANOVA with Project Type as the independent variable. This analysis revealed a significant effect, $F(2, 62) = 3.37, p < .05, \eta^2 = .10$. Post hoc analyses revealed a significantly greater change in pre- to postproject empathy scores for students engaged in service learning compared to both the interview project, $t(34) = 3.43, p <$

Table 1. Exam Performance and Empathic Tendency Scores As a Function of Project Type

Variable	Service Learning		Interview		Research Paper	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Performance on exams						
First exam	84.72	9.68 ^a	82.61	12.25 ^b	85.47	9.42 ^c
Exams 2 to 4	86.93	7.97 ^a	82.52	9.82 ^b	84.15	9.13 ^c
Empathy scores						
Beginning of semester	39.35	22.30 ^d	40.16	13.37 ^e	40.32	30.05 ^f
End of semester	52.12	16.58 ^d	34.79	12.59 ^e	30.50	35.58 ^f
Difference scores	12.76	16.27 ^d	-5.3	15.45 ^e	-9.82	35.26 ^f

^a*n* = 75. ^b*n* = 44. ^c*n* = 73. ^d*n* = 17. ^e*n* = 19. ^f*n* = 31.

.005, and the research paper, $t(44) = 2.20, p < .05$. Interestingly, postproject empathy scores actually decreased (although not significantly) for two latter groups. Empathy scores for the service learning group increased 76% and 42% compared to the research paper and interview project, respectively (see Table 1). The significant beneficial effect of the service learning option was confirmed in a subsequent ANCOVA that controlled as a covariate students' preproject empathy scores, $F(2, 62) = 4.25, p < .05, \eta^2 = .12$.

Discussion

I explored service learning in relation to exam performance and empathy in a life-span psychology course. Performance on exams was similar across the three groups before beginning the projects. However, service-learning students performed significantly better on subsequent exams compared to the other two groups of students. Although previous reports have been inconsistent with regard to the cognitive benefits of service learning (see Eyler, 2000; Steinke & Buresh, 2002), the relation between practical experience and academic performance found in this research provides clear support for the use of service learning.

Reflection that integrates service with course content is a strong predictor of positive cognitive and personal outcomes (Bingle & Hatcher, 1995; Eyler, 2000; Eyler & Giles, 1999; Mabry, 1998). In this research, service-learning students had regular opportunities to engage in reflection, which may have increased their understanding of course content and their understanding of others' emotional experiences. Service-learning students demonstrated higher postproject empathy scores compared to the other students. There were no differences between the groups' preproject empathy scores, so the benefits of service learning were not due to any preexisting differences between the groups. Furthermore, only the service-learning students demonstrated a significant increase in empathy scores between the beginning and end of the semester; scores actually went down (although not significantly) for the two other groups. Thus, the increase in empathy appears to be a positive outcome of students' service-learning experiences.

As with any self-report measure, it is difficult to rule out the influence of social desirability. However, because I used the same self-report measure for all groups, any effects of social desirability would be similar across the groups. Investigators may want to consider the use of non-self-report measures (e.g., reports from room-

mates or best friends) in future research on empathy. In conclusion, these findings add to the growing body of research related to the impact of service learning on cognitive and personal outcomes. In addition, the benefits that service learning appears to have on emotional empathy is particularly important because this finding is novel within the service-learning literature.

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Note

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