Student Perceptions of a Service-Learning Experience

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Pharmacy schools are adopting service-learning to foster communication and interaction skills, social responsibility, and a philosophy of caring. This study describes the extent students believed two required service-learning programs met these objectives. Students in the first year (P1) of a four year doctor of pharmacy program spent 24 hours per term at community service agencies and second year students (P2) attended clinics for the medically underserved for four hours per term. Most of the students (93.4 percent) completed the Service Experience Questionnaire, an internally consistent instrument consisting of forty-nine closed-ended items, after their experience. A majority of P1's (64.0 percent) and P2's (86.0 percent) felt that the experience was educational. These experiences enhanced their respect for the individual, awareness of others in need, confidence in interacting with others and provided them with an opportunity to improve their communication skills. These results support the utility of an experiential learning pedagogy to meet the AACP's educational objectives.

INTRODUCTION

A growing number of pharmacy schools are adopting servicelearning programs(1-6). Interest in this alternative pedagogy arises from a perceived utility in fostering communication and interpersonal skills and a philosophy of caring. The AACP has advocated the use of innovative educational strategies that provide practice experience early in the curriculum(7). Servicelearning is a form of experiential education characterized by hands-on community involvement that is integrated with the academic curriculum(8). These courses are designed to encourage the development of a sense of caring for others(9), social responsibility, and active community participation addressing social problems(10). Community service provides students an opportunity to make use of and refine recently acquired knowledge and skills. This could occur in a medical or non-medical setting. A fundamental component of service-learning programs is reflection(11-12), defined as "the ability to step back and ponder one's own experience, to abstract from it some meaning or knowledge relevant to other experiences"(13). Reflection links community service and academic study. The intent of this active examination is to progress from a simple description of the experience to critically analyzing it and finally to gaining personal meaning(14-15). If service-learning programs are to continue to expand, a better understanding of their effectiveness is needed. The purpose of this study was to assess students' perceptions of the utility of service-learning.

The University of Pittsburgh School of Pharmacy has two required service-learning programs that are tailored to the educational level of the student. The school requires each student to complete two years of pre-professional education prior to admission into the four-year PharmD program. An objective of the first professional year (PI), General Service Experience (GSE) is to improve interpersonal skills and social awareness of clients' needs. Each student provides service at one of the following sites during each semester of their first year: nursing homes, child-youth services, homeless shelters, soup kitchens, battered womens' shelters, assisted living facilities for the mentally ill/retarded, hospices, and drug and alcohol programs.

Twenty-four hours of service is required for each term. Service activities are designed to provide an educational experience and meet the needs of the community. Students attending the homeless shelters and soup kitchens feed and talk to people. Participants visiting nursing homes provide companionship for elderly residents. Student tutors give educational assistance and serve as role models for young children in the inner city. Reflection is fostered in the GSE through small group discussions among students who serve the same populations, class presentations, journals, and a paper that contrasts service expectations with the actual experience. The 1998-99 academic year is the first time the GSE has been offered.

Second-year PharmD students (P2) commit four hours of community service per semester as part of the Indigent Care Service Experience (ICSE). Students participate in the delivery of pharmaceutical care. Service of indigent populations occurs at clinics providing health care for the medically underserved. P2 students conduct medical and medication histories. obtain vital signs, observe patient examinations, are involved in team discussions, assist with medication and dosage selection, fill and dispense prescriptions, counsel patients under a pharmacists' guidance, and research medical questions. Open-ended survey questions are completed by P2 students after attending clinic to elicit their perceptions of the experience. The ICSE was first offered in the 1997-98 academic year. In the future, students will complete the GSE and ICSE in successive years as they progress through the pharmacy curriculum. A more detailed description of the development of service-learning at the University of Pittsburgh can be found elsewhere(6).

Previous service-learning evaluations from multiple academic disciplines have identified a wide variety of social and educational benefits including enhanced moral development, social responsibility, class participation, attendance, comprehension of course content, and diminished racist attitudes(16-22). Allied health educators have reported improved ethical

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Table I. Sample characteristics

	Class of 2001 N=100	Class of 2002 N=81	Class of 2003 N=91	Total N=272
Type of service experience	Indigent Care-P2	Indigent Care-P2	General-P1	
Year of service	1997-98	1998-99	1998-99	
Response rate (N)	99.0%	98.7%	82.4% (75)	93.4% (254)
Gender (% female)	68.0%	59.5%	65.0%	65.0%
Current volunteer experience (% yes)	24.2%	12.5%	22.7%	19.5%
Previos volunteer experience (hours) ^a				
0 10.1%	30.0%	18.7%	18.9%	
1-10	18.2%	20.0%	38.7%	24.8%
10-50	35.4%	23.8%	20.0%	27.2%
50+	36.4%	26.3%	22.6%	29.1%

^aResponse options are not mutually exclusive due to clerical error.

decision-making abilities in occupational therapy students who completed an elderly visitation program(23). Researchers studying pharmacy students who participated in a service-learning exercise concluded that the students became more confident in their interactions with others(24).

The AACP advocates that pharmacy education "must facilitate the acquisition by entry-level students of a relevant knowledge base, skills, attitudes, ethics, and values."(7). Training must foster an affective relationship between the pharmacist and patient, specifically the pharmacist must view all patients as people worthy of respect and the highest quality of care. While pharmacy education is successful imparting knowledge, altering the beliefs and attitudes of students presents a new challenge that may be met through experiential education.

The objectives of the present cross-sectional report are to determine whether students perceive: (i) the GSE and ICSE useful for their professional education; (ii) differences between the service-learning programs; and (iii) if the amount of direct contact with service recipients influences program assessments.

METHODS

Potential participants included 272 doctor of pharmacy students from three classes. One-hundred P2s from the class of 2001 and 81 from the class of 2002 completed the ICSE during the Fall 1997 and 1998 academic terms respectively. Ninety-one Pis from the 2003 class completed the GSE experience in the Fall, 1998 term. Participants were instructed to fill out the study instrument after their service experiences. First year students completed their 24 hour GSE throughout the Fall term and completed the surveys in the first week of class after the winter recess. P2 students completed their four hour ICSE throughout the Fall term by attending one of five clinics that treated the medically underserved. In order to minimize the length of time between clinic visits and service assessments, P2 students received study instruments in the beginning of the Fall term and returned the evaluations after attending clinic. Non-responders received a second opportunity to complete their evaluations in the first weeks of the following term. The instrument used was the Service-Experience Questionnaire (SEQ) designed specifically for this study. The pilot version was administered to the Class of 2001 and consisted of 37 items divided into five sections: overall program evaluation, competencies, service characteristics, demographics, and qualitative assessment. Respondents rated the extent of their agreement to five items assessing general perceptions of the service experience. Thirteen evaluative statements

Table II. Amount of direct contact with people that service benefited

	General experier		Indigent care service experience (P2) ^a		
Direct contact ^b	Percent	N	Percent	N ^b	
0%	4.0	3	5.2	4	
1 - 30%	36.0	27	16.9	13	
31 -50%	16.0	12	26.0	20	
51 -70%	9.3	7	11.7	9	
71-100%	34.7	26	40.2	31	

aClass of 2002 only.

assessed the impact of service-learning on five specific competencies: caring attitudes, social responsibility, teamwork, confidence, and communication abilities. These evaluative statements were generated by Pharmacy faculty based on themes identified from previous courses' reflective exercises and from the AACP outcome competencies. Selected items were stated in negative terms to avoid an acquiescence response bias.

An assessment of the amount of direct contact between the student and the people that their service directly benefited provided data on the amount of interpersonal interactions. Background characteristics measured include gender, age, previous and current volunteer experiences. Five open-ended questions provided more individualized evaluative information (e.g. "What did you think of the experience?" or "What was your favorite/least favorite part of the experience?").

After completion of the pilot, two changes were made in the SEQ prior to administration to the Classes of 2002 and 2003. First, eighteen additional evaluative questions were added to the original questionnaire to allow for the calculation of internal consistency. Second, the response choices for the direct contact item were expanded from five to 10 to augment the precision of measurement. This expanded questionnaire was administered to the classes of 2002 and 2003. The revised SEQ can be found in its entirety in the Appendix. Quantitative data analyses were performed using SPSS for Windows 95/NT release 8.0(25). Differences between classes for nominal level variables were determined using the chi-square. The t-test for independent samples was performed for differences in evaluations. Measures of the degree of relationship were calculated with the Pearson's product moment correlation. The internal consistency measure of reliability of the evaluative criteria was determined with Cronbach's coefficient alpha(26) and evalua-

^bTotal N=77 due to missing data for three students.

	General service P1 (N=75) Penecent		Indigen care P2 (N=179) Percent				
	Agree ^a			Agree	Mean	SD	P
Program Assessment	-		_	-	-	_	_
The experience was educational.	64.0	3.48	1.02	86.0	4.00	0.83	< 0.01
I learned very little from the experience. ^c	23.6	3.19^{b}	0.94	6.25	3.83^{b}	0.78	< 0.01
A service experience should be required for more than one semester.	18.7	2.60	1.03	22.5	2.58	1.17	
The service experience requirement should be eliminated.	23.0	3.12^{b}	0.99	27.4	3.18^{b}	1.25	
The service experience made me feel like I made a difference.	41.1	3.12	0.90	53.1	3.44	0.92	< 0.05
Specific Competencies							
The service experience highlighted the importance of respect for the human person.	71.6	3.65	0.87	75.4	3.89	0.92	
The experience enhanced my awareness of others in need.	69.9	3.66	0.77	78.8	3.83	0.80	
The experience enhanced my confidence in interacting with others.	62.7	3.52	0.86	70.4	3.75	0.84	
The service experience provided the opportunity to improve my communication skills. ^c	64.4	3.52	0.84	73.7	3.71	0.96	
The experience made me realize how much I have to offer to others who are in	04.4	3.32	0.04	13.1	3.71	0.70	
need.	60.8	3.46	0.78	64.2	3.66	0.87	
The experience gave me the opportunity to learn first hand about empathy.	38.4	3.38	0.79	66.9	3.65		< 0.05
The service experience makes me want to do community service in the future.	32.9	3.04	0.87	52.0	3.38		< 0.1
I learned about the importance about teamwork.	30.7	3.03	0.91	72.6	3.80	0.82	< 0.001
The experience impressed upon me the many opportunities available for							
pharmacists to serve the community	19.2	2.78	0.79	60.9	3.53	0.87	< 0.001
I am not any more aware of the needs of the community as a result of the experience	17.3	3.44 ^b	0.84	11.2	3.71 ^b	0.95	< 0.05
Community service is unrelated to pharmacy.	57.5	2.53^{b}	0.82	6.7	3.88^{b}	0.84	< 0.001
The experience did little to change any prior perceptions I had about the population I served.	36.0	3.16	1.03	16.7	3.48	0.96	< 0.05
Community service requirement is effective in enhancing the AACP outcome of Personal awareness and social responsibilities.	64.4	3.64	0.79	62.4	3.62	0.95	

^a Score greater than or equal to four on a five-point Likert scale: l=strongly disagre; 2=disagree; 3=neutral; 4=agre; 5=strongly agree.

tive statements with an item to total correlation of less than 0.20 were removed(27-28). The primary investigator conducted qualitative thematic analyses on open-ended responses.

RESULTS

Two-hundred and fifty-four of the 272 students (93.4 percent) provided usable data. Table I shows the characteristics of each class. Sixty-nine percent of the ICSE students completed the SEQ immediately after their experience with the remainder requiring a single follow-up. There were no differences between classes in terms of gender or current volunteer experiences. There was a significant difference between classes in the amount of previous volunteer experience (χ_2 =24.87, P<0.001). The amount of direct contact between students and the people that their service directly benefited is shown in Table II. Slightly over half (51.9 percent) of the P2 and 44.0 percent of the P1 students spent more than fifty percent of their time with service recipients.

The evaluations of the service experiences can be found in Table III. The only statement with an item to total correlation of less than 0.20 was "The experience reinforced some previous biases I had about the population I served." After removal of this item, the internal consistency of the SEQ was 0.96. There were no statistically significant differences based on age, gender, or volunteer experience. The assessments of the ICSE Classes of 2001 and 2002 differed significantly on only one item. The Class of 2002 rated their experience as more educational (t(177)=3.764, P<0.001). Due to the overall similarity in evaluations, the values for the two classes were combined.

Many of the students' assessments of their experiences were relatively favorable (i.e. mean score above 3.5). A majority of the P1 (64 percent) and the P2 students (86 percent) agreed that the service-learning experience was educational. The first year students reported that they felt that the experience highlighted their respect for the individual (71.6 percent). enhanced their awareness of others in need (69.9 percent). increased their confidence in interacting with others (62.7 percent), and provided them with an opportunity to improve their communication skills (64.4 percent). The second year students believed that their participation in the ICSE had a positive effect on these areas as well. Over two-thirds of the second year students reported that the experience enriched their respect for others (75.4 percent), awareness of the needs of others (78.8 percent), confidence in interacting with others (70.4 percent) and gave them opportunity to refine their communication skills (73.7 percent).

However, the data also indicate some areas where the students' evaluations of their service-learning programs are equivocal. A minority of first year students agreed that the experience helped them learn about empathy (38.4 percent), motivated them to do community service in the future (32.9 percent), and helped them learn about the importance of teamwork (30.7 percent). Most of the students in this class (57.5 percent) agreed with the statement that community service is unrelated to pharmacy. Additionally, none of the eighteen items on the instrument that the P1 students completed achieved a mean score of 4.0 or better. While a majority of the P2 students had generally favorable impressions of the program, there was only

^b Score reversed (1=5; 2=4; 4=2; 5=1) for mean value with higher values reflecting more favorable evaluations.

^C Item administered to Classes of 2002 and 2003 only.

one item on the instrument that achieved a mean score of 4.00 and there was one item with a mean score less than 3.0. With regards to an overall assessment of the programs, over one-fifth of the first year and second year classes agreed that the service-learning requirement should be eliminated, 23.0 and 27.4 percent, respectively.

While first and second year students had relatively favorable evaluations of the course, Table III also shows that there were differences in the students' assessments of their experiences. While a majority of both classes agreed that the experiences were educational, more of second year students believed this than first year students (P<0.001). Most of the P2 students (53.1 percent) felt that the experience made them feel like they made a difference while slightly less than half of the P1 students (41.1 percent) agreed with this statement (P < 0.05). Second year students were also more likely than first year students to agree that they learned about empathy (P < 0.05) and the importance of teamwork (P<0.001). A majority (52.0 percent) of the P2's agreed that the experience made them want to do more community service in the future while only a minority of P1's felt this way (P<0.01). Additionally, there was a particularly large difference between the way the first year and second year students viewed the relationship between community service and pharmacy (P < 0.001).

The amount of direct contact between students and the people that their service benefited was associated with more positive assessments for the ICSE. ICSE students who spent more time with patients rated the experience more favorably in several areas. They found that the experience provided a greater opportunity to gain respect for the human person (r(77)=0.28, P<0.05), to learn about empathy (r(77)=0.27, P<0.05), awareness of the needs of others (r(77)=0.23, P<0.05), teamwork (r(77)=0.24, P<0.05), and personal awareness and social responsibility (r(77)=0.33, P<0.01). GSE students with more direct contact learned more about what they have to offer others in need (r(74)=0.30, P<0.01).

DISCUSSION

In summary, first and second year students believed their service-learning experiences were educational and taught about respect for the individual, enhanced their understanding of the needs of others, confidence, and communication skills. This finding is consistent with Osborne, Hammerich and Hensley's research(24) that determined that service-learning as a component of a pharmacy communication course improved the students' confidence in their interactions with others. The ICSE appeared to have a greater impact on learning about teamwork and commitment to the community. Second year students were more likely than first year students to see the relationship between community service and pharmacy and felt motivated to do community service in the future.

This investigation did not find that the amount of direct contact with service recipients influenced the overall evaluations of the programs. However, there were areas where direct contact appeared to have an impact on the students' experience. Increased contact with clients increased first year students awareness about what they had to offer others and enhanced second year students ability to learn about empathy, respect, and the needs of others.

In reviewing these results, there are certain questions that emerge. First, why did the second year students have a more positive assessment of their experience compared to the first year students? One explanation is that the indigent care experience placed students in a multidisciplinary health care environment where they provided medical services to patients that they may not normally encounter in a typical pharmacy. A general theme from the qualitative evaluations that P2 students completed after this experience was that they enjoyed interacting with the pharmacists, physicians, medical students, nurses, and other members of the health care team who also attended the clinics. Pharmacy students may feel more comfortable in an environment where they are able to apply their knowledge and skills than students who are not directly involved in providing pharmacy services to patients. Pharmacy students in the indigent care experience, in contrast to the general service experience, worked under the direct supervision of a pharmacist. The pharmacist-preceptor was available to help the student reflect on the values of the experience such as empathy, community service, teamwork, and other attributes and skills necessary for a caring health care professional.

In contrast, it appears that some of the first year students had difficulty understanding the relevance of the experience to their pharmacy education. In the qualitative assessment of the course, some of the students questioned why this was a required course. The first year service-learning sites did not have supervisors on site who could provide them with immediate feedback about how these activities contributed to their development as a pharmacist. This was the initial year that the program was implemented and was the first time that many of the agencies and organizations had worked with pharmacy students. Agencies were learning about the pharmacy students' capabilities and may have asked the students to occasionally complete tasks that were of questionable educational value (e.g., cleaning, filing, etc.,). Additionally, the data indicates that P1 students had less direct contact with service recipients than P2 students. This relative lack of direct contact may have affected the first year students' satisfaction with the experi-

Another potential explanation why the P2's were more enthusiastic about their service-learning experience than the P1's is that students may be better able to understand the relevance of courses as they progress through the curriculum. First year students are just beginning to learn about what it means to be a pharmacist and may have had difficulty in perceiving the connections between their experiences and their pharmacy education.

A second question that arises is why more than one-fifth of students in both classes believed that the service-learning requirement should be eliminated. There are a variety of interpretations for this finding. It is possible that students were uncomfortable with the absence of lectures and formal laboratories in the course. The locations and times that the students were asked to provide service may have affected their evaluations. All of the students had to travel off-campus to their sites and most of the students' experiences occurred at nights and on the weekends. It was interesting to the course coordinators to see that while an overwhelming majority of P2 students found the experience educational, many students in the class agreed that the course should be eliminated. Some students told faculty in informal conversations and in focus groups that the second year of the curriculum was an academically demanding year and that students had reservations about any new courses that imposed additional demands on their time. There does not appear to be published information which would allow the formal comparison of this course on this item to other required pharmacy service-learning, community service, or even traditional didactic courses. One might suspect that, if asked, students would favor eliminating many courses in the pharmacy curriculum.

Another issue that requires further examination is the impact the quality and quantity of direct contact with service recipients on program evaluations. The data suggests that the amount of direct interaction with service recipients is but one among many factors that influence the students' assessments of the experience. Additional research is needed to further identify the salient components of an effective service-learning program for pharmacy students.

There are various limitations to the present report. First, the curriculum was being changed from an entry level BS to PharmD program while service-learning was being implemented. Due to these developments, some students may have given less favorable evaluations because they were not open to curricular changes such as service-learning. Second, servicelearning has only recently been a required component of the curriculum for all P1 and P2 students and this was the first time that the course was evaluated by students. Service-learning experiences continued throughout the Fall and Spring terms and the assessments were completed prior to the Spring service experience. Evaluations for both experiences may have been different if conducted following a full year of service. In addition, future classes will complete the P1 and P2 service experiences in consecutive years for a total of fifty hours of service at three different sites and this report does not address the combined utility of both programs. Longitudinal assessments conducted at multiple points throughout the academic year are needed. One challenge to evaluating the GSE is that all students do not have similar experiences and each service site has its own strengths and limitations. Each service experience offers its own unique benefits. In some experiences the student will practice functioning as a member of a team. In others, students will learn how to be more empathetic and compassionate. Finally, future evaluations must also determine if the needs of service recipients are being addressed. For example, students providing service in a nursing home may feel that they were being empathetic and attentive to the needs of their clients but the elderly receiving the services may have a different point of view.

Recommendations

Service-learning offers numerous educational benefits that would be difficult to achieve in a traditional course(16-24) and therefore will continue to be a required element of the pharmacy program. Several lessons have been gained by adopting service into the curriculum that may be of interest to other pharmacy schools considering similar programs. This study indicates that, overall, students found their service-learning experiences useful. There are several strategies that the course coordinators believe could be used to improve the students' experiences. First, the number of sites that provide students with direct contact with service recipients should be optimized. Faculty need to continually assess and monitor the amount of contact that students are having with clients. However, course coordinators may need to be patient with organizations and agencies as they learn how to meet pharmacy students' and service recipients' needs.

The finding that P2 students rated their ICS experiences more educational than the P1 students rated their GS activities raises the question of whether a patient care component should be included in every service-learning program for pharmacy students. A challenge for faculty members and their community service partners is to help students understand how general service-learning opportunities contribute to their personal and professional development. Students need to appreciate that they may "...need to learn (relearn) to care as another human being, willing to 'be with' rather than simply 'to do to"(30). The faculty members who are involved with the experiential learning course for P1 students do not plan to require these students to engage in patient care activities. The course instructors adopt the perspective that it is important that P1 students, who are in the very early stages of their clinical skills development, be provided with the opportunity to nurture their appreciation for the psychosocial dimensions of care. Faculty, during class debriefing sessions, group discussions, and individual feedback on students' reflection papers, stress to students that they must strive to understand the whole person and reflect on how their experiences will help them become more caring pharmacy practitioners.

Based on the faculty's experiences with implementing two service-learning courses over the past three years, there are additional recommendations that others may find useful. Faculty must take the time to help the students understand their role in the organization that they are serving before they begin the experience. Students need to feel comfortable in discussing their concerns with course coordinators. For example, a suspended ceiling collapsed during one indigent care clinic. While no patients, providers, or students were hurt, the students' experiences and lessons learned that day were extraordinary. Faculty need to be sensitive that not all service experiences, even experiences at the same site, are alike. Students must understand before they start providing services that each experience is unique and they must strive to learn from every situation.

Service coordinators should provide numerous opportunities for student reflection. Reflection is fundamental to personal growth and development in service-learning experiences. This also allows faculty to identify and address any concerns or problems, and to monitor students' progress. Through journals, papers, and carefully guided class discussions, students can integrate the experience with their existing knowledge base. The variety and depth revealed in the reflective exercises is astonishing. One student observed that tutoring children helped her see why she needed to counsel patients about their medications in terms that the patients could comprehend. Students noted in their journals how they became more aware that they needed to understand that medication was one of many problems faced by their clients. These experiences also helped students to better perceive the stereotypes that they may have about certain patients. For example, one student felt that they learned that "Personal biases need to be set aside to provide appropriate care."

CONCLUSIONS

This investigation has demonstrated that an experiential learning pedagogy is useful in meeting AACP outcome competencies. The University of Pittsburgh will continue to offer both service-learning experiences, to assess and refine these programs, and to develop the best experiences possible.

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References

- Scott, C. S. and Deloatch, K. H., "Advanced pediatric pharmacotherpy: An elective course with service-learning," Am. J. Pharm. Educ., 62, 420-426(1998)
- (2) "Service and learning: A synergizing combination," Annual Report, Purdue University, School of Pharmacy and Pharmaceutical Sciences, West Lafayette IN, (1996) pp. 12-14.
- Nickman, N. A., "Community service at Utah," Am. J. Hosp. Pharm., 50, 1578(1993). Letter.
- (4) "New clerkship enables pharmacy students to study patients over time," *Pharmacy Record*, University of Minnesota Minneapolis MN (Spring, 1998) pp. 10-11.
- (5) "Experiential learning becomes a reality," *The Wisconsin Pharmacy Graduate*, University of Wisconsin-Madison, Pharmacy Alumni Association, Madison WI (Fall, 1998) pp. 1,4.
- (6) Lamsam, G. D. "Development of a service-learning program," Am. J. Pharm. Educ., 63, 41-45(1999).
- (7) Commission to Implement Change in Pharmaceutical Education, "Background Paper II: Entry level, curricular outcomes, curricular content and educational process," *ibid.*, 57, 377-385(1993).
- (8) Kraft, R. J. and Krug, J., "Building community: Service learning in the academic disciplines," in R. J. Kraft and Marc Swadener (edit.) Review of Research and Evaluation on Service Learning in Public and Higher Education, Colorado Campus Compact, Denver CO (1994).
- (9) Commission on National and Community Service, "What you can do for your country," Government Printing Office, Washington, DC (1993) p. 15
- (10) Honnet, E.P. and Poulsen, S., "Principles of good practice for combining service and learning," Wingspread J., (October 1989).
- (11) Colorado State University, Essential Characteristics for Course Inclusion in the Service Integration Project, Fort Collins CO (1994).
- (12) Honnet, E.P. and Poulsen, S. J., Principles of Good Practice for Combining Service and Learning, Johnson Foundation, Racine WI (1989)
- (13) Jacoby, B., "Service-learning in today's higher education," in Service Learning in Higher Education, (edit. Jacoby B. and Associates) Jossey-Bates Publishers, San Francisco CA (1996) pp. 3-25.
- (14) Seifer, S.D., "Service-learning: Community campus partnerships for health profession education," Acad. Med., 73, 273-277(1998).
- (15) Hutchings, P. and Wutzdorff, A., "Experiential learning across the curriculum: Assumptions and principles," in Hutchings, P. and Wutzdorff A. (edits), Knowing and Doing: Learning Through Experience, New Directions for Teaching and Learning, 35, Jossey-Bass, San Francisco CA(1988).
- (16) Stanton, T.K., "Writing about public service: The critical incident journal," in *Guide for Change: Resources for Implementing Community Service Learning*, (edits. Rhoads, R.A. and Howard, J.P.F.) Jossey-Bass Publishers, San Francisco, CA (1998) pp. 47-56.
- (17) Boss, J. A., "The effect of community service work on the moral development of college ethics students," J. Moral Educ., 23, 183-198(1994).
- (18) Markus, G. B., Howard, J. P. F. and King, D. C, "Integrating community service and classroom instruction enhances learning: Results from an experiment," *Educ.*, Eval. Policy Analysis, 15, 410-419(1993).
- (19) Olney, C, and Grande, S., "Validation of a scale to measure development of social responsibility," *Michigan J. Community Service Learning*, 2, 43-53(1995).
- (20) Myers-Lipton, S.J., "Effects of service-learning on college students attitudes toward international understanding," J. Coll. Student Develop., 37, 659-668(1996).
- (21) Myers-Lipton, S.J., "Effects of a comprehensive service learning program on college students' level of modem racism. *Michigan J. Community Service Learning*, 3, 44-54(1996).
- (22) Batchelder, T.H. and Root, S., "Effects of an undergraduate program to integrate academic learning and service: Cognitive, prosocial, and identity outcomes," *J. Adolescence*, 17, 341-355(1994).
- (23) Giles, D.E. and Eyler, J., "The impact of a college community service laboratory on students' personal, social, and cognitive outcomes," *ibid.*, 17, 327-339(1994).
- (24) Osborne, R.E., Hammerich, S. and Hensley, C, "Student effects of service-learning: Tracking changes across a semester," *Michigan J. Community Service Learning*, 5, 5-13(1998).
- (25) Greene, D., "The use of service learning in client environments to enhance ethical reasoning in students," Am. J. Occup. Ther., 51, 844-

- 852(1997).
- (26) Norusis, M. J., SPSS Inc. "SPSS for Windows 95/NT Release 8.0," SPSS Inc, Chicago IL (1996).
- (27) Cronbach, L.J., "Cronbach alpha and the internal structure of tests," *Psychometrika*, **16**, 297-334(1951).
- (28) Wiederholt, J.B. "Development of an instrument to measure evaluative criteria that patients use in selecting a pharmacy for obtaining prescription drugs," J. Pharm. Mark. Manage., 1, 35-59(1987).
- (29) Norusis, M.J., "Measuring scales: Reliability analysis," in *Professional Statistics*, SPSS, Chicago, IL(1993) pp. 143-154.
- (30) Nickman, N.A. "(Re)-Learning to care: use of service-learning as an early professionalization experience," Am. J. Pharm. Educ., 62, 380-387(1998).

APPENDIX. SERVICE EXPERIENCE QUESTIONNAIRE

1.	serv	v much so ice requir None	ervice experierement?		ve you had 25 - 50 hou	•	8-hour	
	B) I	Less than	5 hours	F) 5	50-100 ho	urs		
		5-10 hour 10-25 hou		G) 1	nore than 1	100 hours		
2.	worl A) Y	k? Zes	,		, ,	urrently do	volunteer	
			nany hours pe					
	Is yo	our volun	teer work pha	armacy	related?	Yes	No	
3.	How much of your experience involved direct contact with individuals that your service directly benefited?							
		0%		F)	41-50%			
	B)	1-10%		G)	51-60%			
		11-20%			61-70%			
	D)	21-30%		I)	71-85%			
	E)	31-40%		J)	86-100%			
3b)	What skills did the service experience demand of you? (check all that apply)							
	One-on- interpersonal skills							
	One-on-one interpersonal skins Public speaking skills							
		istening						
				a chille	,			
	Clinical problem solving skills General problem solving skills							
		Superviso		ig skill	3			
			ent skills					
	11	vialiagelli	CIII SKIIIS					

4. Did the service experience require pharmacy knowledge?

Other (e.g. music, art, etc.), please specify

A) No B) Yes

5. Was the service experience related to health care?

A) No B) Yes

For each statement, please fill in the letter of the response below that best indicates the extent of your agreement/disagreement with the following statements (1=strongly disagree, 2= disagree, 3=neutral, 4=agree, 5=strongly agree).

- 6. The experience was educational.
- The classroom is a more effective setting than a service experience to practice communication skills.
- The experience did little to change any prior perceptions I had about the population I served.
- 9. I learned about the importance of teamwork.
- The experience enhanced my confidence in interacting with others.
- 11. I am not any more aware of the needs of the community as a

- result of the experience.
- 12. An 8-hour service experience should be required for more than just this one semester
- 13. The service experience highlighted the importance of respect for the human person.
- 14. The service experience made me more aware of what I can contribute to the community.
- 15. The 8-hour service experience requirement should be eliminated.
- The experience made me realize how much I have to offer to others who are in need.
- 17. The experience gave me the opportunity to learn first hand about empathy.
- 18. The experience enhanced my awareness of others in need.
- The service experience makes me want to do community service in the future.
- The service experience dispelled some previous biases I had about the population I served.
- Community service requirement is effective in enhancing the AACP outcome competency of personal awareness and social responsibilities.
- 22. Community service is unrelated to pharmacy.
- The experience impressed upon me the many opportunities available for pharmacists to serve the community.
- 24. The service experience made me feel like I made a difference.
- 25. Some aspects of pharmacy one cannot learn in class, and a service experience is an effective method to learn.
- The service experience provided the opportunity to improve my communication skills.
- The service experience did little to show me how I can make a contribution to the community.
- 28. I have become more empathetic towards the needs of the underserved as a result of the experience.
- The service experience made me want to volunteer time to serve others in need.
- The service experience should be required for more than one semester.

- 31. The experience enhanced my self-confidence.
- 32. The experience made me feel like I helped others.
- 33. The experience changed the prior perceptions I had about the population I served.
- 34. I am more aware of the needs of the community as a result of the experience.
- 35. The service experience enhanced my appreciation for the dignity of the human person.
- 36. A service experience is an effective method to learn those aspects of pharmacy that one cannot learn in class.
- 37. I am more likely to do community service in the future as a result of the service experience.
- 38. The service experience reinforced some previous biases I had about the population I served.
- The experience made me think that community service is unrelated to pharmacy.
- 40. The service experience requirement should be eliminated.
- I am more aware of the many opportunities available for pharmacists to serve the community as a result of the service experience.
- 42. The experience taught me to look beyond the disease in appreciating the individual as a person with feelings.
- 43. The experience made me more confident.
- 44. The service experience improved my ability to work as part of a team
- 45. I learned very little from the service experience.
- The service experience is a valuable addition to classroom experience.
- 47. The experience did little to enhance my awareness of others in need.
- 48. Your gender A) male B) female 49. Your age A) 17-20 E) 24 B) 21 F) 25
 - C) 22 G) 26-30
 - D) 23 H) 30 and older