



Meeting the Goals of Service-Learning in Pharmacy Education Through Community Campus Partnerships

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Abstract

This paper describes the experiences and implementation of a service-learning program at the West Virginia University School of Pharmacy from 2006 to present. In 2006, the School of Pharmacy began a curricular revision to include Introductory Pharmacy Practice Experiences (IPPEs) throughout the curriculum. These were developed to provide students experience in providing patient care and developing disease prevention and health promotion programming in a variety of settings. The service-learning component of IPPE is a three-semester long experience that focuses on developing a project that meets one or more objectives of Healthy People 2020. The paper describes the course objectives, structure, and assessment. The program was assessed through student evaluations and the impact on the community. The paper highlights meaningful ways to integrate service-learning into a health professional curriculum.

Healthy People 2010, published by the U.S. Department of Health and Human Services, was a statement of national health objectives (U.S. Department of Health and Human Services, 2001). It was based on these fundamental goals: to increase quality and years of healthy life; and to eliminate health disparities. While the objectives delineated in the Healthy People report are used by many different people, states, communities, and organizations, they share the common objective of helping others develop programs to improve health. In 2010, Healthy People 2020 was published and further outlined objectives related to health and wellness for the next decade (U.S. Department of Health and Human Services, 2010).

Educating health care professionals to provide disease prevention and health promotion services continues to be a primary focus in academic medicine. The Clinical Prevention and Population Health Curriculum Framework Task Force was formed as a joint venture between

the Association of Teachers of Preventative Medicine and the Association of Academic Health Centers to increase health promotion and disease education in health professions education (Allan et al., 2004). Recommendations of this report were to integrate clinical prevention and population health into health professions education and patient care, including screening, counseling, immunization, and chemoprevention.

The American Association of Colleges of Pharmacy Center for the Advancement of Pharmaceutical Education published educational objectives in 2004 to serve as a resource for colleges of pharmacy to guide curricular development and the education of future pharmacists. Central to the educational objectives is to “promote health improvement, wellness, and disease prevention in cooperation with patients, communities, at-risk populations, and other members of an interprofessional team of health care providers” (see p. 8 of <http://www.aacp.org/resources/education/Documents/CAPE2004.pdf>). Further, the importance of educating Doctor of Pharmacy student pharmacists in disease prevention and health promotion is evident in the Accreditation Council of Pharmacy Education’s Standards 2007 (Accreditation Council for Pharmacy Education, 2007) and in the Joint Commission of Pharmacy Practitioners Vision for Pharmacy Practice in 2015 as defining promotion of health improvement, wellness, and disease prevention as foundational elements of the practice of pharmacy (Joint Commission of Pharmacy Practitioners, 2004). To promote meaningful service-learning experiences in the pharmacy curriculum, the following criteria should be met:

(1) meet a community need, (2) establish or enhance a relationship between the community and the academic institution, (3) help foster civic and professional responsibility and the develop of a sense of caring for others, (4) integrate into the required academic curriculum, (5) provide structured time to reflect on the service-learning experience, (6) enhance what is taught in the didactic curriculum by extending student learning beyond the classroom and into the community, (7) provide opportunities for interactions with other health professional students and practitioners, and (8) attempt to balance the service that is provided and the learning that takes place.(Accreditation Council for Pharmacy Education, 2007).

A review of the pharmacy literature demonstrates that service-learning has been introduced as a component of the curriculum at a number of schools of pharmacy (Kearney, 2004; Mackinnon, 2004; Nemire, Margulis &Frenzel-Shepherd, 2004). However, we sought to expand on the existing programs by increasing the duration of the service-learning curriculum, relating the projects specifically to Healthy People, and requiring students to assume a significant role in project development, implementation, and outcomes assessment.

A primary educational outcome of the West Virginia University (WVU) School of Pharmacy Doctor of Pharmacy degree program is to improve patient health through disease prevention and health and wellness initiatives with patients and communities, particularly those at high-risk for chronic diseases. Development and implementation of projects that meet the goals of Healthy People will prepare student pharmacists for their future work in the profession of

pharmacy. This is particularly true in rural communities, as pharmacists are often the most accessible healthcare provider (Rodriguez de Bittner & Zaghab, 2011).

In 2006, the School of Pharmacy began a revision to the experiential curriculum to include Introductory Pharmacy Practice Experiences (IPPEs) throughout the first three years of the professional program. The intent of the IPPEs is to provide students practice experiences beginning in the early stages of the pharmacy curriculum. These experiences are to be integrated with the didactic coursework to progressively prepare students for their advanced pharmacy practice experiences (Accreditation Council for Pharmacy Education, 2007). Although student pharmacists participate in traditional community pharmacy, hospital pharmacy, ambulatory and acute care experiences as part of IPPEs, a greater opportunity for student involvement in disease prevention and health promotion in the community was sought. Thus, the School of Pharmacy began a three-semester course series in the first professional year (P1) and second professional year (P2), which focuses on advancing the objectives of Healthy People. The goals of the initiative are to (a) instill the values of community service in student pharmacists, (b) apply didactic knowledge of health promotion and disease prevention to members of the community, (c) improve verbal and written communication skills, and (d) improve and enhance project development skills. This paper describes the initial implementation of the program in 2006 and evolution of the program over the past four years.

Method

Course Design

The service-learning program is made up of the following three courses: IPPE 2, which is taught in the spring semester of the first professional year; and IPPE 3 and 4, which are taught in the fall and spring semesters of the second professional year, respectively.

Although the primary focus of the first professional year of the IPPEs is community pharmacy, a component of the course also serves as an introduction to service-learning through several in-class and out-of-class experiences. Student pharmacists are simultaneously enrolled in a 2-credit hour course, "Disease Prevention and Health Promotion," which provides foundational knowledge. The IPPE 2 service-learning objectives include: (a) identify the clientele, environment, and services provided by a community agency, (b) apply the goals and objectives of Healthy People to the practice of pharmacy, (c) develop communication and leadership skills through interaction with community partners, and (d) participate in self-reflection.

An overview of service-learning and the goals and objectives of Healthy People is provided via lecture format to the P1 student pharmacists. A panel discussion with community partners and P2 students is also held to provide firsthand guidance and insight into the service-learning projects. A service-learning fair with all potential community partners is held during this

semester in order to find an agency or organization that best fits a student's interests and skills. This fair provides an opportunity for student pharmacists to ask questions, get to know the partner, view a visual display of what the agency/organization site is like, and gain a better understanding of what the organization accomplishes in the community. After the fair, student pharmacists rank their top 3 agencies. Using these rankings, students are assigned in groups of 5 or 6 to each agency. An initial onsite visit is then completed during this semester to provide the student pharmacists an opportunity to become familiar with their site and to learn about the mission and scope of the agency. After this first visit, a reflection is completed to discuss the potential role of their group in supporting the mission of the agency and meeting a goal of Healthy People.

The second professional year IPPE courses are each worth one credit hour and are scheduled to meet one hour per week with a primary focus of service-learning. In order to facilitate onsite experiences and project planning, activity time is given for about one half of the scheduled class meetings for these courses. Each course is graded satisfactory/unsatisfactory and student pharmacists must earn a score of 80% for a satisfactory grade. Class content is sequenced to introduce student pharmacists to topic/content areas; to build on content in other didactic courses; to provide onsite experiences; and facilitate team-building and reflective exercises. Student pharmacists keep online journals to stimulate reflective thinking, which are shared with the course instructors. Course instructors comment on and evaluate student reflections in writing by sharing their thoughts about each entry in the electronic journal.

The fall semester objectives of the second professional year include: (a) explore the pharmacists' role in meeting the goals of Healthy People, (b) develop an action plan for a health-care related project for a community agency based on Healthy People, (c) develop communication and leadership skills through interaction with community partners, (d) develop written communication skills through project proposal development, (e) reflect upon the community agency experiences. During this semester, student pharmacists complete a minimum of 10 hours of onsite work with their community partner to establish a working relationship with the site supervisor and their clientele. Student pharmacists conduct an onsite needs assessment to select the most appropriate project. A minimum of 10 additional hours of project planning time is also required during IPPE 3. The primary goal this semester is to design a health-related service initiative that meets the mission of the agency and that is directly related to an aspect of Healthy People. Beginning in 2008, student pharmacists are paired with a faculty mentor who has expertise in the project area who serves as a resource to the group throughout the year. For example, a group working with the Alzheimer's Association would be mentored by a faculty member with expertise in geriatric medicine. Final project plans are approved by the course coordinators, community partners, and faculty mentors. Student self-reflections and community partner, faculty mentor, and peer evaluations are components of the course grade. Limited funding is available through the School of Pharmacy to support project needs, such as photocopying and supplies.

The primary goal of the spring semester of the second professional year is to implement and evaluate the health-related service initiative that was developed during the fall semester. Objectives of this semester include: (a) implement a health-care related project for a community agency based on Healthy People, (b) develop communication and leadership skills through interaction with community partners, (c) participate in health outcomes data collection and evaluation, (d) develop written communication skills through poster development and educational material development, (e) reflect upon the community agency experiences and assess its impact on your future community service endeavors. Student groups complete a minimum of 10 hours of onsite work with their community partner and a minimum of 10 hours on final project preparations in addition to onsite time. At the end of the semester, project results are presented via oral presentations to fellow student pharmacists, staff, faculty, and community partners in class. Student pharmacists also develop poster presentations of their work that are displayed in the main entrance to the Health Sciences Center during the School of Pharmacy Annual Scholarships and Awards Convocation. This venue provides an opportunity for family and friends to view the student work. Components of the course grades include self-reflection; community partner, faculty mentor, and peer evaluations; oral and poster presentations. Final projects are submitted in abstract form.

The School of Pharmacy partnered with the WVU Center for Civic Engagement in the development of the program. The Center for Civic Engagement develops and organizes service-learning opportunities for students and faculty, consults with academic units on implementation of these projects, and assists with assessment of civic engagement activities.

The community partner selection process is based on extensive matching criteria delineated by the WVU Center for Civic Engagement. Because of the close working relationships of the Center and its partners in the community, the Center for Civic Engagement is uniquely positioned to match student pharmacists with agencies in need of health-related programming. Prior to each semester, the Center for Civic Engagement requests project or programming needs of partners through an online submission system. The primary consideration of a partner is their ability to foster a project that meets Healthy People objectives. Other considerations include site location, supervisor, and the hours of operation of the agency. Other important attributes include: expertise, flexibility, and history of success of the site supervisor.

The Director of Public Relations and Alumni Affairs is also an integral part of the service-learning experience at the School of Pharmacy. This relationship became formalized during the 2009-10 academic year, and the director now coordinates all media support for project implementations, which includes sending out periodic press releases for local print and television media coverage and also news bulletins for the Health Sciences Center Campus. She also reviews all printed materials developed by the service-learning groups to verify accuracy and that all legal requirements are met.

Although the service-learning projects are completed at the end of the second professional year, service-learning and community outreach activities continue throughout the remainder of the curriculum. Through a state-supported rural health initiative, students participate in interdisciplinary service-learning projects during their fourth professional year (P4) Advanced Pharmacy Practice Experiences (APPEs). Students complete eight, 5-week APPE rotations, of which two must be in designated rural areas. During rural rotations, student pharmacists spend 20% of their time participating in community service and community-based research activities. An electronic "tool kit" of educational brochures, materials, and presentations that resulted from the service-learning projects implemented in IPPE 4 is made available to all student pharmacists and preceptors to use during these experiences. The tool kit is available to student pharmacists via the Health Sciences Center Intranet. As APPEs are completed across the state, the use of the materials developed during the service-learning course throughout the APPEs, allows the projects to reach a much greater population.

Course Assessment

Reflections are a key area of emphasis for the student pharmacists throughout all three semesters of the service-learning course sequence to assess the course and to determine if the goals of service-learning have been met. Students are required to complete one reflection after their first site visit in the spring of their P1 year, four reflections during the fall semester of the P2 year, and three reflections in the spring of the P2 year. All are compiled in their electronic journal accessed through the Health Science Center Intranet. The first assigned reflection is at the end of the P1 year, and the students are to discuss their first site visit and their expectations for the coming year. The reflections developed for the fall semester of the P2 year, during the planning phase, center around the mission of their agency and how their project relates to Healthy People, their thoughts about how service and learning are related, and how they will be able to apply the skills they are learning through this project in the future. The reflections assigned during the spring semester of their P2 year focus on the final stages of project planning, implementation, and future participation in the community. The reflections are graded on a Likert scale using a rubric developed by the Center for Civic Engagement.

In addition to reflective assignments, the student groups are also required to submit a final proposal at the end of the fall semester of the P2 year. This project plan is used to measure the students' progress in project planning, to understand their plan for project implementation, to verify that important relationships have been developed, and to assess their written communication skills. The students must relate their project to both the goals and objectives of Healthy People and also the mission of the agency. They must understand the clientele that is being served at the agency. Project methodology is outlined in the fall proposal, and the student pharmacists are asked to hypothesize their anticipated project results. They must also discuss potential barriers of project implementation, and a plan to overcome these barriers must be developed.

Spring semester assessment includes reflective writing assignments, as well as an oral presentation, poster presentation, and written abstract. The students are required to present a 10-minute oral presentation about their project at the end of the spring semester of the P2 year. The audience for this oral presentation includes faculty evaluators, course coordinators, project mentors, student pharmacists from their class, and community partners. The presentations are given during the final 3 class sessions of the semester and all group members must participate in the final presentation.

The students also develop a poster presentation and abstract regarding their project at the end of the spring semester of the P2 year. They are provided with a sample poster and abstract and the materials necessary for creation of the poster. The posters are displayed during their final presentation and also at an awards ceremony for all School of Pharmacy students, faculty, parents, and friends.

Beginning during the 2009-10 academic year, peer and mentor evaluations are completed at the end of both the fall and spring semesters to assess the students' participation in team activities. Areas are evaluated utilizing a rubric that includes cooperation, responsibility, participation, and communication. These evaluations are useful to determine students' effort in project preparation and implementation, as a large portion of their work is completed outside of the classroom.

Feedback from the community partners is used to assess the partnership and the overall success of the program. The community partners complete evaluations at the end of the fall and spring semesters to provide feedback about the program and the student group assigned to their agency. Feedback regarding community partner relationships is also solicited from student groups at the end of each semester during the P2 year.

A coordinator from the School of Pharmacy or Center for Civic Engagement or the faculty advisor is in attendance at most of the community partner agencies when the projects are presented to the clientele. This is a great forum for the community partner to provide informal feedback to the course coordinator and also to the student group. Discussions about the project planning and the implementation take place at this time, and the overall success of the program is evaluated upon completion of the project. Overall assessment of the project in this manner provides immediate student feedback to all partners with collaboration between community partners and students.

Both the course instructors from the School of Pharmacy and Center for Civic Engagement use class discussions as a means of evaluating the partnership and program. Meetings are conducted on a regular basis after project implementations or class sessions with the students to reflect on the program and ways to improve each particular aspect of the program. The information discussed at these times is used to improve the program for future years.

Results

Effectiveness of the service-learning program is primarily measured by the impact that it has on the community. The results from the pilot year, 2006-07, and the most recent year, 2009-10 are summarized in Table 1. Projects during this time frame met goals of Healthy People 2010, as this was prior to the release of Healthy People 2020. Students continue to be increasingly visible in the community completing these activities and promoting healthy lifestyles. In addition to these results, media coverage of service-learning activities for the 2009-10 academic year included 2 television clips and 5 newspaper articles.

Table 1: Effectiveness of the Service-Learning Program

Indicator	2006- 2007 Academic Year (Pilot Year)	2009- 2010 Academic Year (Current Year)
Number of Student Pharmacists	74	83
Number of Community Partners	16	15
Number of Projects Implemented	18	15
Community Service Hours Earned	1600	2400
Interactive Programming Hours	54	70
Printed Materials Distributed (Packets, brochures)	1300	1700

At the end of the 2009-10 year, students were asked to evaluate the extent to which they felt they were able to develop a health-care related project for a community agency based on Healthy People 2010 and improve their communication and leadership skills through the experience. On a 5-point Likert scale (1= not at all, 2 = poor, 3 = adequate, 4 = well, 5 = extremely well), 65 of the 81 respondents felt they developed a project well or extremely well (average score = 4.16 +/- 0.73). In terms of communication and leadership skills, 79 respondents felt there was an improvement in their communication and leadership skills (average score = 4.00 +/- 0.81.)

In a separate end of semester course evaluation of instruction distributed through the university, students were asked to rate their understanding of the relevance of service-learning and how it applies to their future as a healthcare professional. All responses are provided on a 5 point Likert scale. The mean response provided from 42 students was 4.54, indicating an understanding of the importance of service-learning in the curriculum. Student reflections are also evaluated and provide great insight into the course. One student wrote,

My experience has consistently been that following our service-learning events, I am given the sense of accomplishment and fulfillment that occurs when helping others. My service-learning experience has opened me up to many new ideas, experiences, and people. Not only have I made a positive contribution to my community, but I have learned more about myself and my abilities.

Discussion

While some schools have implemented elements of service-learning into their IPPE curriculum, the program at WVU School of Pharmacy is unique based on its partnership with the WVU Center for Civic Engagement, longitudinal course activities that promote active learning, and the development of a comprehensive tool kit of student resources that are available for APPE rural health rotations. This permits P4 students on rotations to have resources readily available for community service events.

As the relationship has developed between the School of Pharmacy and the Center for Civic Engagement, the unique expertise of each separate department has become apparent. The Center for Civic Engagement has long-standing, solid relationships with the community partners throughout the state of West Virginia and were aware of needs of the community and the specific agencies, as well as how to implement service-learning and create a positive learning environment for students. The School of Pharmacy brought the ability to provide drug information and wellness approaches to meet the needs of the community. Having course coordinators from both the Center for Civic Engagement and SOP has been a great example for the student pharmacists and provided a great deal of assistance with project development. Therefore, this partnership has allowed for a solid foundation for the service-learning program.

The longitudinal course activities that are completed throughout the 3-semester service-learning program provide students the opportunity to develop written and oral communication skills. The service-learning fair held at the School of Pharmacy provides the students an opportunity to meet all of the community partners and learn about their agencies to make an informed decision before selecting their preferences. This lends to the enthusiasm of the students for their assigned community partner. The skills are cultivated through online reflective writing completed by the students. The project plan, abstract, oral presentation, and poster session allow for additional skills to be developed. The poster session at the School of Pharmacy allowed the student pharmacists' work to be displayed and appreciated by parents and staff, faculty, and students from all disciplines within the Health Sciences Center. The development of the poster and oral presentations will assist with student preparation for their APPE rotations and potentially with future residency projects.

As the service-learning tool kit is available for the students to use throughout their P4 year on rural health rotations, it was important to work together with the Director of APPE. The

Director of the APPE program communicates the availability of the tool kit to preceptors in designated rural areas. The director has worked closely with the service-learning program to assure the success of the tool kit and Healthy People projects throughout the P4 year.

Many aspects of the service-learning program have been successful as measured by the faculty, students, and community partners. End-of-semester evaluations are completed by the students, group advisors, and community partners at the conclusion of the fall and spring semesters of the P2 year. The students evaluate the overall service-learning course, and the community partner and group advisor evaluate their specific group project. The partnership developed with the Center for Civic Engagement, the student and community partner panel discussion, the service-learning fair, faculty advisors, oral and poster presentations, public relations for the School of Pharmacy, and community service hours earned have all been considered some of the most successful aspects of the course sequence.

The program evolved over the past three years. In 2010, the scope of student projects was updated to meet the objectives and targets outlined in Healthy People 2020. The expanded objectives provide even greater opportunities for students to implement diverse health and wellness projects. The overall course goals and objectives remain unchanged.

During the first year of the program, student groups varied from 1 student to 6 students per group. Due to academic progression, medical, and personal reasons that may preclude a student from advancing into the spring semester of the P2 year, student groups may lose members prior to project implementations. The modification that was implemented included that all student groups include between 5 and 6 students. This assured that there would be adequate coverage if all group members did not progress.

The Center for Civic Engagement has relationships with community partners, therefore, they select the agencies to invite to participate in the service-learning program with the School of Pharmacy. During the first year, some agencies selected had a difficult time of providing a meaningful project that could be directly related to the goals of Healthy People. The Center for Civic Engagement worked even more closely with the agencies to verify that a project could be developed by the student group that would meet one or more of the goals of Healthy People and the mission of the agency. This resulted in a few agencies such as Habitat for Humanity not participating with the School of Pharmacy for the 2nd year, but new agencies such as Sundale Nursing Home and the Red Cross having the opportunity to participate.

The first year of the program, the students didn't have a required amount of onsite time to spend with their community partner at their agency, which limited their collaboration on project plans. Students are now required to spend a minimum of 10 hours onsite with their community partner during the fall semester of project planning. An additional 10 hours is spent planning the project at the necessary venue (library, health science center).

Assessment and evaluation have also expanded with the program. Initially, student reflections and community partner evaluations were the central components of evaluation. The addition of the mentor and peer evaluations have greatly increased the true evaluation of students' participation in both project planning and implementation, as so large a portion of time is spent outside of the classroom.

Changes have occurred with the scheduling of the service-learning fair. Initially, it was held during January of the P1 year, but partners were not assigned until later in the semester (due to the ability to choose the geriatric track and based on partner availability). Therefore, too much time elapsed between the fair and these other activities. The service-learning fair is now held midway through the semester, and students are assigned a site approximately 2 weeks after the fair and submission of preferences. They will then be able to complete their initial site visit during the final month of the semester.

As interdisciplinary learning is not currently a formal component of the course, student pharmacists have taken advantage of working with other health care students in the Health Sciences Center to improve the success of their service-learning projects. One group worked with exercise physiology and physical therapy students to develop an exercise video as part of a 5-week nutrition course that was offered. Another student group worked with the School of Dentistry to complete an oral health session for a group of adolescents at one agency. Future interdisciplinary collaborations within the Health Sciences Center are being formed to expand initiatives such as this school-wide.

Summary

The service-learning program is an integral part of the School of Pharmacy curriculum. The program has begun to instill the values of community service in students, allow them to apply didactic knowledge to the community, and improve verbal and written communication skills. Healthy People is a valuable framework to use to meet the goals and objectives of this course.

We believe that this service-learning curriculum is readily transferred to other Schools or Colleges of Pharmacy and other health professions if the institution is committed to service-learning. Having a division which oversees the service-learning mission of the university is extremely beneficial as they have already developed partnerships with community agencies. Use of these available resources greatly enhanced the success of the program.

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