

A Framework for Service-Learning in Dental Education

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Abstract: Service-learning has become an important component of higher education. Integrating service-learning into dental and dental hygiene curricula will foster graduates who are better prepared to work effectively among diverse populations and to function dynamically in the health policy arena. Although the phrase is familiar to dental educators, there is not a consistent understanding of what comprises this pedagogy. This article offers a framework for service-learning in dental education and describes ten components that characterize true service-learning. This framework can provide a common understanding of this form of experiential education that brings community engagement and educational objectives together. More effective programs can be built around a shared understanding of the characteristics and goals of service-learning in dental education.

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Experiential education is a basic feature of preparing dental professionals. Dental students master clinical skills through the experience of providing services for patients in dental school clinics with direct supervision, in combination with didactic instruction. However, in addition to mastering the art and science of dentistry, the public expects dentists to be prepared to serve diverse patients and communities and to use their knowledge to inform the development of public policy. Dental education can apply the concepts of experiential education to developing students' skills in understanding human diversity and the dynamics of community. Dental education can foster skills in influencing and shaping public policy about health issues. Dental education can cultivate graduates who have a broader understanding of health and social service agencies, thereby enabling them to become advocates for patients, family, or community members in need of help. Consequently, dental educators need to ask the question: Do dental graduates internalize an appropriate vision of their role as a health professional in the context of community? Integrating service-learning into the dental curriculum will create a deeper understanding of the dynamics, the assets, and the challenges of the community and its relationship to oral and general health. These insights can be taught most

effectively though experiential learning in partnership with the community. According to Aristotle, "What we have to learn to do, we learn by doing."¹ Therefore, to foster graduates with skills and ethics that reflect value for civic responsibility, dental education must create the opportunity for students to experience activities that will facilitate acquisition of those skills and values.

Integrating dental education into the community has far-reaching benefits, not the least of which is to enhance the understanding that dental education is a public good, not simply a private benefit for the privileged who become dental students and ultimately practicing dentists. One state, Indiana, recognized the potential of service-learning to contribute to the community good. In 2002, the Indiana State Legislature passed the following resolution: "Resolved: That the House of Representatives of the Indiana General Assembly urges the institutions of higher education in the State of Indiana, and especially those institutions that are state-supported, to utilize service learning as a central vehicle for campus-community collaboration and of engagement of those institutions, and as an important pedagogy for student learning and for nurturing lifelong citizens."

Service-learning is now a major national movement. Connecting academic study with community

service through structured reflection is widely recognized as contributing to learning that is deeper, longer-lasting, and more portable to new situations and circumstances.² Service-learning as a pedagogy is a response to concerns about the ability of higher education to make the connection between teaching technical skills and using those skills to address issues of public concern.^{3,4} For six years, Eyster and Giles studied 1500 college students from over twenty institutions across the United States who were involved in service-learning.⁵ They found that the majority reported and demonstrated that they had a deeper understanding of the subject matter and the complexity of social issues and were better able to apply material they learned in class to real problems.

The Role of Service-Learning in Dental Education

Increasingly, schools of dentistry are integrating required rotations in community health center dental clinics, hospitals, and private practices located in dental health professions shortage areas. The Robert Wood Johnson Foundation Pipeline, Practice, and Community Project funded fifteen schools of dentistry to move toward placing students in community rotations sixty days of their fourth year of predoctoral education and to pursue enrollment of underrepresented minorities. The Pipeline program and increased community-based clinical placements by other dental educational institutions is a move in right direction. With this new emphasis comes an opportunity to implement a service-learning model that will provide an even greater depth of understanding and will produce graduates with more sophisticated knowledge of the dynamics of community.

Service-learning is known by many, widely varying definitions. The first definition, published in 1979, described it as an experiential educational approach based on reciprocal learning. Since that time, the pedagogy has developed in sophistication and has grown in use and acceptance. A widely accepted definition was developed by Community Campus Partnerships for Health (CCPH), the lead organization promoting community engagement among health professional schools. In the CCPH definition, service-learning is a structured learning experience that combines community service with preparation and reflection. Students engaged in service-learning provide community service in response

to community-identified concerns and learn about the context in which service is provided, the connection between their service and their academic coursework, and their roles as citizens.⁶

Furco's model graphically explains the differences between service-learning and other types of experiential learning (Figure 1).⁷ This model places service programs on a continuum determined by its primary intended beneficiary and its overall balance between service and learning. Each program occupies a range of points on the continuum and is positioned to illustrate whether the emphasis of that type of experiential learning is focused on the learning or the service and whether the beneficiary is the provider or the recipient. Service-learning is positioned in the center to illustrate an equal emphasis of focus on learning and service, as well as equal benefits for the student and the recipient. Furco's model explains the focus on balancing service and learning, and CCPH's definition elucidates the characteristics of service-learning.

The framework for dental education proposed in this article offers a structure around which the planning, implementation, and evaluation of service-learning in the dental curriculum can be built. The framework is comprised of ten components, all of which should be present to categorize community engagement as service-learning in dental education (Figure 2). The components are described here and are illustrated in a case study in the Appendix. Through use of this framework, dental educators will be able to differentiate between service-learning and other types of community engagement. This differentiation will enable more precise understanding of the characteristics of the programs being discussed.

1. Academic Link

Service combined with learning adds value to each and transforms both.⁸ Service-learning must be an academic activity: it can be course-based, competency-based, or a structured volunteer experience. In dental education the most obvious community locations are community health center dental clinics, hospital dental clinics, and private offices in areas designated as dental health professions shortage areas (DHPSA). Predoctoral-preclinical years may be overlooked as an opportunity to begin the process of integration into community-based experiential learning. Some of the most powerful service-learning experiences occur in a nonclinical setting, where the artificial barriers of the "white coat" do

Distinctions Among Service Programs

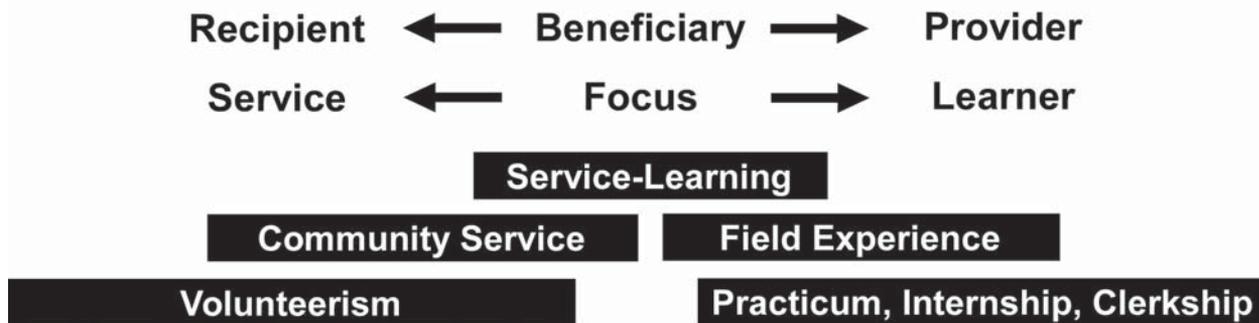


Figure 1. Distinctions among service programs

Source: Furco A. Service-learning: a balanced approach to experiential education. At: www.floridacompact.org/pdf/resources/SL-ABalanced Approach.pdf.

not interfere with communication and where students can critically examine and question what they know as they reframe their understanding of the impact of social issues on health. There are limitless potential locations for nonclinical experiences: Head Start programs; shelters for the homeless or victims of domestic violence; Special Olympics; rehabilitation centers; Women, Infants, and Children's Nutrition (WIC) centers; state or county health departments. Nonclinical and clinical assignments require a clear understanding of the role and objectives of the experience. An effective nonclinical service-learning experience can be structured so that students learn about a population by providing nonclinical service at an agency followed by planning and providing an oral health program or intervention based on the knowledge gained about that group in the first phase of the rotation.

2. Sustained Community Partnerships

In addition to clinical rotations, dental education typically sends students to community sites to provide oral health education presentations. These assignments may occur with a random approach, involving minimal preparation for engaging the par-

ticular population group, little evaluation, and scant emphasis on developing in-depth, ongoing relationships with the community agency or institution. Conversely, the assignments may be consistent with the service-learning method, in which emphasis is placed on developing a few, high-quality, equal, ongoing relationships with selected community partners. The most valuable partnerships are developed with agencies or institutions that provide direct services for populations with which dental students need to increase their level of comfort and competence. In the dental school patient pool, if there are voids in representation of certain types of disabilities or cultural groups, it may be advantageous to recruit community partners that serve those populations. Community partner agencies are willing contributors to dental students' education. They are advocates for the population they serve and are pleased to have the opportunity to influence students' education and thereby encourage more competent and compassionate care for their clients.

Community partner agencies should be actively involved in identifying the problems to be addressed by the program, and the choice of service-learning activities should be based equally on the educational needs of the students and the needs of the population to be served. The agency appoints a mentor who is

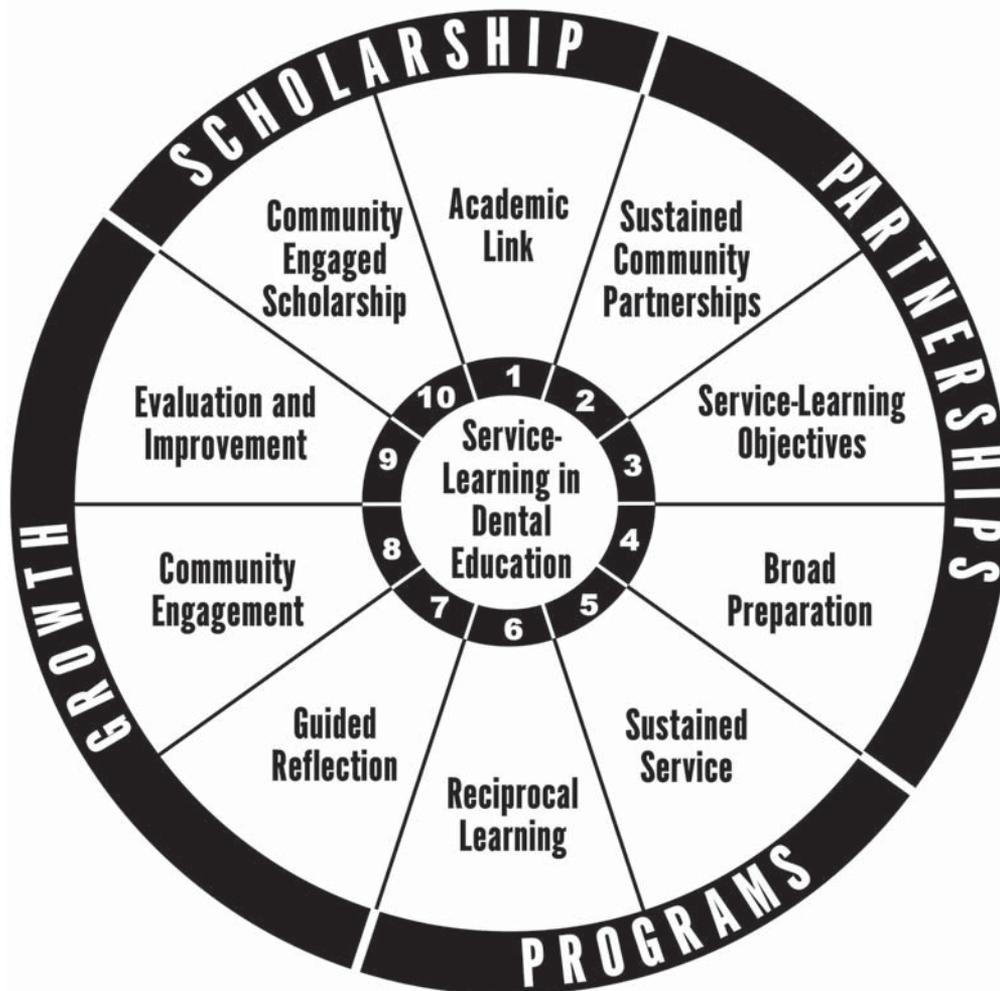


Figure 2. Framework for service-learning in dental education

the primary contact for faculty and students. The mentor can play a variety of roles depending on his or her training, time availability, and interest. The mentor should be a true partner in planning the service-learning program, providing orientation for the students, participating in evaluation of students' service, and overall program evaluation. Describing principles of effective partnerships is beyond the scope of this article, but have been outlined by Community Campus Partnerships for Health.⁹ In recognition of the partnership, some schools offer an honorary nonremunerated faculty appointment, a university library card, email account, or business cards identifying their role as a community partner

with the university. Grants resulting from partnerships should include community partners as recipients, and community partners contributing to research and publications should be listed as coauthors. When the community partner is a dentist in a safety-net clinic, offering continuing education and calibration exercises can lead to shared teaching and evaluation techniques.

3. Service-Learning Objectives

As in didactic classes, the students must understand the expectations. Faculty and community partners should jointly formulate learning and ser-

vice objectives to describe what service they will be providing and how this experience connects with their learning. Objectives are distributed to students, faculty, and community partners and are discussed prior to the service-learning experience. Both service and learning objectives should progress from actions that are clearly measurable and demonstrable (i.e., list, identify, and define) to those that are more complex and require the analysis, application, and synthesis of new material. At the highest level of complexity, students should be asked to criticize, critique, and recommend based on their interpretations of new information.¹⁰

4. Broad Preparation

Preparation for service-learning assignments goes beyond the usual site orientation that describes location and services to be performed. Broad preparation provides students with information that will help them understand the form and function of the agency or institution they will service and the people with whom they will interact. Students may be required to conduct pre-assignment research, often web-based, for information about the agency, the culture being served, demographics of the community including racial distribution and socioeconomic status, and names of legislators who represent that geographic area. Prior to beginning work, students should know, through either research or an orientation session, the mission and vision of the site, what population is being served, funding sources, governance, organizational structure, and characteristics of the population being served. If there are specific characteristics among those being served, such as a certain type of disability, students can be given additional opportunity to become more competent to interact and provide services for that population. Dental schools using problem-based or case-based learning can augment students' preparation for service-learning by building cases that direct students toward researching information about the culture, socioeconomic groups, or people with disabilities being served.

5. Sustained Service

Unlike assignments to provide an educational presentation in a classroom, service-learning involves a sustained amount of time in preparation and service. Although there is no agreed-upon minimum amount of time, some service-learning advocates cite the need for at least twenty hours of service in a single pro-

gram to achieve minimum competency. The amount of time spent in a service-learning assignment will vary according to availability of time, complexity of the program, and other related issues, but should be of sufficient duration to foster depth of understanding and opportunities for reflection. This is one of the defining characteristics that often differentiates service-learning from other community-based activities. Health fairs, classroom presentations, and single short-term programs can be beneficial learning experiences, but are not classified as service-learning by these criteria. Student leadership in planning, implementing, and evaluating such short-term programs, however, can transform the student leaders' experience into service-learning.

6. Reciprocal Learning

Teaching and learning do not always emerge from the academy. An important lesson to be gained through service-learning is that teachers are found in many places, not only in educational institutions. One of the most beneficial results of service-learning is the new-found availability of skilled teachers who have abilities not common among dental faculty members. It is important to alert students to the expectation of learning from the community partner mentors who are highly skilled in working with special populations. As volunteer teachers, they present authoritative information about issues common to the population with which they work. As volunteers, they provide effective teaching at no cost to the school. Agencies are willing to provide these services in exchange for the opportunity to influence students to become practitioners who will be competent, caring dentists for the population they have dedicated their lives to serving. This reversal of roles fosters students who are more respectful of the knowledge of people who are not in the dental or medical professions and encourages them to look to community partners for authoritative information.

7. Guided Reflection

Reflection is a central characteristic of service-learning and has been called the hyphen that links service and learning. In dental education, integration of reflection shows recognition that community-based education must not only strive to enhance the students' knowledge and clinical skills, but also facilitate their personal and professional development.¹¹ Guided reflection causes students to make the connection between their service and academic objec-

tives and fosters the exploration and clarification of complex social issues and personal values. Because the predominant proportion of students will become private practitioners, it is important to make the reflection relevant to their future plans. Reflection can help students examine their role in the community and their relationship with people of other cultures and people with disabilities. Reflection can help students examine their future role in access to care for the unfunded, the unaccepted, the inaccessible, the reluctant, and the unmotivated.

Reflection can occur in a variety of times, locations, and forms, but students report that, to be effective, reflection needs to be continuous, contextual, challenging, and connected.¹² Effective guided reflection can happen prior to, during, and following the experience. Reflection can occur alone or with student colleagues, faculty, service recipients, community partners, or a combination of these people. An effective method of reflection for dental students engaged in service-learning clinical rotations can take the form of written journaling followed by a guided group discussion session that builds on the observations written in the journals. Web-based journal entries are an efficient means of handling students' assignments. Critical incidents have also been used effectively for reflection in dental education.¹³

"What, so what, and now what?," a popular format for service-learning journaling, is a model that grew out of Kolb's theories on the experiential learning cycle.¹⁴ To respond to different students' learning styles, as described by Kolb, it is advisable to offer a variety of types of reflection exercises that include reading, writing, doing, or telling (informing, sharing information). Readings and discussion can include books, professional articles, government documents, and case studies. Reflection through writing can include portfolios, self-evaluation essays, press releases, letter to a legislator or policymaker, and drafting legislation. Reflection by doing can include conducting interviews, simulations, or role playing, creating presentations, and drafting a brochure. Telling can include focus groups, formal class discussions, teaching a class, storytelling, and individual conferences with faculty, the community partner, or a service recipient.

8. Community Engagement

Community engagement involves working in cooperation with a group or groups of people who share a characteristic, such as geographic proximity or a special interest. It is a powerful tool for promot-

ing changes that can improve people's health. It encompasses health promotion and social activism and can utilize the health policy process. In the context of this framework, community engagement is meant to include knowledge about the cultural components of the community and involvement in advocating for health policy issues that affect that community. Community engagement can foster cultural awareness and the desire and ability to become an advocate. The partnerships developed through service-learning create opportunities for students to launch or continue their lifelong venture of learning about the characteristics of different cultures. They develop understanding of the issues facing agencies and organizations that provide services for diverse population groups. A single individual providing dental services for underserved populations has limited potential for significant impact on the problem. However, the results can be more profound and affect a much larger population if addressed on the policy level.

Educational experiences that introduce systemic political or policy-related understanding and engagement can prepare dental professionals to take an active role in instigating changes with far-reaching results.¹⁵ Dental professionals are a reservoir of oral health knowledge and have the potential for shaping healthful public policy. Dental education teaches students to understand the science of dentistry and, through service-learning, that knowledge can be put into action in the political arena, thus enhancing the potential for equitable access to care, effective oral health promotion, public health action, and eventually the improvement of oral health. Skills in shaping healthful public policy are not necessarily intuitive. Incorporating specific course content related to the health policy process and creating opportunities for students to advocate and lobby for improved general and oral health policy will prepare dental students and graduates to take a leadership role in the health policy process. Through a service-learning experience, students can, for example, lobby for an organization they have served, write a letter of support to a policymaker, draft a legislative proposal, or participate in activities of organizations such as the Children's Dental Health Project.¹⁶

9. Ongoing Evaluation and Improvement

Evaluation of classroom instruction typically involves measuring students' mastery of the subject matter. In service-learning, student evaluation is

measured against the service and the learning objectives; therefore, it is important to write the objectives in terms that are quantifiable. Written reflection exercises may be evaluated, but not graded, to encourage students to be candid in writing about their perceptions of their service-learning experiences.

In service-learning, the evaluation takes place throughout the process and includes not only students, but the community partner agency, mentors, participating faculty, and recipients of the service. Because service-learning programs often involve external funding, the evaluation process can be an effective tool for demonstrating outcomes of the program and encouraging continued funding. When service-learning takes place in a safety net clinic, it is appropriate to request evaluations from the dental director, medical director, students, staff, and patients. Evaluations are useless if they are not applied to continuous quality improvement. Funding agencies often request outcomes measures that go beyond describing the process; therefore, collecting information that can verify program impact can be very effective, such as documenting fewer absences at the local school because of toothaches as a result of the students' work at the safety net clinic.

10. Opportunities for Community-Engaged Scholarship

For tenure-track faculty members, good works are not enough. A significant gap exists between the goal of health professional schools to function as community-engaged institutions and the reality of how faculty members are typically judged and rewarded, which often does not value service to the community. For service to become an area of excellence and an asset in the promotion and tenure process, it must become scholarship. The Report of the Commission on Community-Engaged Scholarship in the Health Professions defines community-engaged scholarship as "scholarship that involves the faculty member in a mutually beneficial partnership with the community. Community-engaged scholarship can be transdisciplinary and often integrates some combination of multiple forms of scholarship. For example, service-learning can integrate the scholarship of teaching, application, and engagement, and community-based participatory research can integrate the scholarship of discovery, integration, application, and engagement."¹⁷ Community-engaged scholarship applies to each of these domains: research (e.g., community-based participatory research), teaching (e.g.,

service-learning), and service (e.g., academic public health practice).¹⁸ Throughout the process of integrating service-learning into dental education, faculty should be aware of opportunities to use the experience to inform their teaching, research, and service and should persistently search for opportunities to publish in peer-reviewed journals.

Conclusions

Service-learning is a pedagogy that is well suited to dental education. It has the potential of fostering graduates who have a greater depth of understanding of the populations, institutions, and agencies that comprise their communities and practices. Taking dental students out of the classroom and into the community can create opportunities for greater understanding that culture, lifestyles, and behaviors can profoundly influence the prevalence of health, illness, and oral disease in a population. Service-learning has the ability to provide dental students and faculty with the knowledge, skills, and incentives to enter into the health policy arena and to promote healthful public policy. It can help develop students who have a broader concept of their role as a health care provider. This broader concept would include much more than being an entrepreneur in the health care industry. It would involve functioning as educators, social workers, advocates, and many other roles that make up the matrix of a socially responsible society. This framework can promote broader understanding of the characteristics and concepts basic to service-learning in dental education.

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APPENDIX

Case Study

This case study describes an example of a service-learning program in dental education and identifies the applicable service-learning framework components.

Nineteen fourth-year dental students enrolled in an elective called Service-Learning in Community Oral Health (component #1). They understand that this entails a year-long commitment and will involve providing comprehensive care for adults with disabilities.

Goodwill Industries, which operates a sheltered workshop for adults who are intellectually disabled, is located a few blocks from the School of Dentistry. The workshop manager is concerned that many of their clients apparently have poor oral health and no access to care (component #2). The state's Donated Dental Services is an affiliate of the National Foundation of Dentistry for the Handicapped. The 550 volunteer dentists in the state who provide free care through the Donated Dental Services program for people who are disabled and have low income are aging and retiring, and few younger dentists are taking their places as volunteers. Donated Dental Services wants dental students to become familiar with the program so they will become volunteers (component #2). Both organizations agree to enter into a partnership with the school of dentistry to attempt to improve the oral health of the clients of Goodwill Industries and to enhance the dental students' education and potential for becoming Donated Dental Services volunteers. The organizations and faculty mentors meet to draft service objectives and learning objectives (component #3).

The students receive orientation on site at Goodwill Industries from community partner mentors and faculty mentors about the assets and challenges of the population they will serve, the objectives of the program, and the mission, services, and goals of the agency (component #4). Students and mentors bring portable equipment to Goodwill Industries to assess the oral health status and treatment needs of the clients who have no access to care. Funding has been secured from a local foundation to pay the dental school clinic fees for services. An appropriate number of Goodwill clients are selected for the program consistent with the amount of funding that is available for that year. The mentors and students discuss the individual needs of the selected clients and the skill levels and clinical needs of the students and make assignments to students accordingly. Students visit with the clients at the sheltered workshop, make appointments with them directly or with the help of their family or case worker, and begin treatment.

Students continue providing treatment for patients throughout their fourth year of dental school. Following dental appointments with their patients from Goodwill Industries, students enter reflection notes in a school of dentistry intranet web-log (blog) including formulation of new learning issues that emerged from their interaction with the patients. Patients are identified only by code number on the blogs. On a monthly basis, throughout the academic year, the faculty and community partner mentors meet with the students in this program (component #5). Each session has three components: reflection, topical discussion, and ongoing evaluation. Guided reflection about the ongoing experiences of providing dental services for this population helps the students gain more insights into what they are learning and how it connects with their educational preparation for becoming a dentist (component #7). The community partner mentors, who have extensive experience working with adults who are intellectually disabled, provide presentations and lead discussions about this population. They provide a depth of knowledge about this population that would not typically be found among dental school faculty (component #6). Community partner mentors lead discussions on topics such as autism, deaf culture, handling seizure disorders, American sign language, communicating with people with disabilities, community resources for people with disabilities, and current health policy issues that affect this population (component #8). Monthly, and sometimes more frequently, students and mentors evaluate the program's progress in comparison with the stated service and learning objectives. Program revisions are made when indicated. Students' grades are determined by faculty and community partner mentors cooperatively and are based on comparison of the students' performance measured against the service and learning objectives of the program (component #9).

Data are collected throughout the year that describe many aspects of the program, the oral health of the population being served, techniques and procedures that are being developed and learned, and information on how the process is affecting students' attitudes and skills. These data are a reservoir of information for scholarly publications by the mentors and students (component #10).