Service-Learning in Dental Education: Meeting Needs and Challenges

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Abstract: Community-based service-learning is increasingly common in dental education. By definition, service-learning combines educational goals with service to the community, and the community and school are equal partners. The three main goals of service-learning are improving learning, promoting civic engagement, and strengthening communities. There have been calls from many groups to reform dental education to better serve the public, and service-learning is one of the most often recommended methods to help meet this goal. One of the key attributes of service-learning is its potential to promote civic engagement and social responsibility during the student’s education. The social responsibility of dentists and aspects of professionalism can be learned by students through participation in well-structured service-learning programs. Community-based service-learning programs can also address societal needs by improving the public’s access to oral health care through partnerships among dental schools, oral health providers, and communities. This article describes service-learning programs at several dental schools to illustrate application of this educational strategy in predoctoral dental education. This article also describes challenges that confront schools desiring to implement and sustain service-learning programs, including academic quality, faculty development and training, interprofessionalism, making time in the curriculum, budget, faculty shortages and time, student credit, quality control, and remote sites away from the dental school.

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Service-learning is a form of experiential education that combines intentional learning goals for students with service to the community. There is a growing movement to institutionalize service-learning in higher education, including health professions schools. With numerous calls for major reform in dental education to better meet the profession’s obligation to serve the health care needs of the public, it has been suggested that introducing service-learning into the curriculum provides a way to meet that goal. The Macy Study found that service-learning is one of the most successful strategies to improve the educational and financial sustainability of dental schools.

This article summarizes service-learning as an educational strategy and then describes the three main goals of service-learning: to improve education, promote civic engagement, and address societal needs. The article provides examples of how these goals are being met in specific programs conducted by several U.S. dental schools and also describes what some dental schools are doing to meet the challenges of implementing successful service-learning programs.

Jacoby summarizes the various definitions of service-learning by describing it as “a form of experiential education in which students engage in activities that address human and community needs together with structured opportunities intentionally designed to promote student learning and development. Reflection and reciprocity are key elements of service-learning” (p. 5). The hyphen linking the words “service” and “learning” emphasizes that service and learning are equal and interdependent. In well-designed service-learning programs, time is allocated for students to participate in guided reflection about the experience, which leads them to deeper understanding of its meaning. The community can be anywhere, from a local neighborhood to the international community. The human and community needs addressed are those chosen by the community itself. Reciprocity refers to the idea of service-learning benefiting both the community and the service providers, as well as to reciprocal learning in which everyone involved learns from one another by working in a collaborative, nonhierarchical manner. Yoder describes other desirable components of service-learning as including the academic link (starting early in the curriculum), long-term community partnerships, learning objectives, preparation of students, sustained service, community engagement, ongoing evaluation and improvement, and opportunities for
community-engaged scholarship. Other important aspects of service-learning mentioned in the literature are interprofessional learning, respect for diversity and multiculturalism, and integration into the curriculum for credit.

Recently, there has been growing awareness that dental schools need to incorporate more active and experiential approaches to learning. Service-learning as a teaching and learning methodology is usually explained as being derived primarily from experiential learning theories, in which students are actively involved in the learning process, rather than being passive recipients of information transmitted by a teacher. Most learning is tied to the activity, context, and culture in which it happens and by social interaction with peers and experts. It is situated, rather than being abstract or lacking context.

Service-learning differs primarily from other types of experiential learning in that it is directly beneficial not only to the learner but to the community. Many educators have contributed to the theory and practice of service-learning, a discussion of which is beyond the scope of this article. The foundational concepts of experiential learning and service-learning can be traced to John Dewey (1859–1952), who believed that education has a societal as well as an individual purpose and that experience alone is not adequate for meaningful learning. Education, he believed, should be concerned with developing students’ long-term commitment and ability to contribute to society and also with the development of students as individuals. Dewey also emphasized the importance of critical reflection in leading to new understanding, and solutions to, real-world problems. To him, effective learning experiences need four elements: they must 1) capture interest, 2) be intrinsically worthwhile, 3) present problems that generate curiosity and need for more knowledge, and 4) lead to development of learners over a sufficiently long period of time, as does service-learning. It is my belief that dental education should also be concerned with these goals and objectives. For those students who already have humanitarian ideals, service-learning can reinforce and build needed skills; for those who do not, it can expose them to new experiences, possibilities, and attitudes.

Goals of Service-Learning

The three main goals included in most definitions of service-learning are improving learning, promoting civic engagement, and strengthening communities through addressing societal needs. Community-Campus Partnerships for Health (CCPH), the foremost group promoting service-learning among health professional schools, relates these goals to health in its mission statement: to foster “partnerships between communities and educational institutions that build on each other’s strengths and develop their roles as change agents for improving health professions education, civic responsibility, and the overall health of communities.” This section of this article describes community-based education programs utilizing elements of service-learning already in operation by dental schools or in the planning stages to achieve these three goals.

Improving Learning

There have been many calls for sweeping reforms and curriculum change in dental education, including the 1991 and 1993 Pew Health Professions Commission findings; the 1995 Institute of Medicine report Dental Education at the Crossroads: Challenges and Change; the 2000 U.S. surgeon general’s report, Oral Health in America; Healthy People 2010; various articles in this journal commissioned by the American Dental Education Association Commission on Change and Innovation in Dental Education (ADEA CCI); the Santa Fe Group; and the Macy Study. The most frequently advocated dental education reforms broadly address the lack of access to health care for many segments of the population, the increasing complexity and prevalence of disease, and current demographic trends, such as the rapid growth of the elderly population, who are living longer with concurrently greater need for health care services. Other factors that may influence future directions in academic dentistry include budget constraints in higher education, turmoil in the health care system, lack of diversity in the dental workforce, and what is sometimes seen as the dental profession’s isolation, marginalization, and seeming “loss of vision for taking care of the oral health needs of society.”

As a result of many of the calls for change in dental education, an ADEA Council of Sections Task Force, working under the direction of the ADEA CCI, developed a new set of competencies that define the expected entry-level skills of the beginning general dentist. This document, replacing the previous competencies (which were ten years old), was approved in April 2008 by the ADEA House of Delegates. Community-based service-learning in dental schools has the potential to increase competence in all of the domains included in the Competencies for the New
General Dentist: critical thinking, professionalism, communication, health promotion and disease prevention, practice management and informatics, and patient care. A recent review of learning strategies for dental education by Davis et al. specifically recommends the use of community-based and service-learning programs in dental schools, starting early in the educational process.²

Three new dental schools in the United States have been founded with stated missions and curricula largely based on community service, with service-learning as the core of their senior year clinical training: Arizona School of Dentistry & Oral Health (ASDOH), East Carolina University School of Dentistry (ECU), and Western University of Health Sciences College of Dental Medicine.²⁸⁻³¹ ECU has a goal of educating primary care dentists who will practice in the rural and underserved areas of the state, and ASDOH graduates dentists with a certificate in public health who are oriented towards community service. Western University students will have service-learning courses during every year of the curriculum and, like those at ECU, will receive some of their training with other health professions, including interprofessional experiences in service-learning programs. Service-learning sites at these schools include solo and group private practices and community health centers in rural and underserved urban areas. In the United Kingdom, the Peninsula Dental School, the first new dental school in that country in forty years, opened in 2007 with a community-based, nontraditional curriculum.³²

Several established dental schools have recently started or expanded long-term innovative service-learning programs suited for their regions’ particular needs. An example of a unique new program is the University of Washington School of Dentistry’s Regional Initiative in Dental Education (RIDE) program in conjunction with Eastern Washington University,³³ modeled on the thirty-plus years of success of the WWAMI program in medical education.³⁴ The acronym “WWAMI” stands for the states of Washington (the only state of the group that has its own medical school), Wyoming, Alaska, Montana, and Idaho, which support a comprehensive partnership among satellite clinics, practicing physician preceptors, faculty, legislatures, professional associations, and all levels of training. The program includes recruitment of underrepresented minorities and others from rural areas, ranging from the K–12 level through residency programs to lifelong continuing medical education. This program has enhanced access to primary care in rural and underserved areas of the Northwest. It provides medical students and residents at the University of Washington with opportunities to attend the first year of medical school in their own states and have extensive experience of rural health care in remote regions between the first and second years, in the third and fourth years of training, and beyond. The RIDE program for dentistry currently accepts only students from Washington, but in the future may have some support from other states to accept their students. It is hoped that the RIDE program will have results for oral health care similar to the success of the WWAMI program in the region: “WWAMI students have returned to their home states at rates exceeding the national average for a state school and, most important, have returned often to pursue practice in underserved settings” (p. 774).³⁴ The eight selected students per class (mainly from rural areas of the state) in the RIDE program receive interprofessional training at Eastern Washington University in Spokane with dental hygiene, nursing, medical, and physical therapy students during the first year, followed by rural community-based service-learning experiences in the summer between the first and second years. The second and third years are on the University of Washington campus in Seattle. Students also receive four to six months of clinical training in the senior year at regional community sites utilizing a service-learning model with rural dentist mentors as role models.³³,³⁵

The West Virginia University (WVU) School of Dentistry operates a longstanding community-based educational program in which senior dental students, after passing competency evaluations at the school clinic, work and live at a rural site, usually a private practice, for at least six weeks, with the option of an additional six weeks at another site. In addition to providing dental care, students are required to participate in community outreach, interprofessional, and reflective experiences at least one day per week. Over the four years of dental school, students must do an additional 100 hours of approved community service.³⁶,³⁷ This program has been successful at increasing the number of graduates who stay in rural, underserved areas of the state to practice general dentistry.³⁷,³⁸

The Robert Wood Johnson Foundation and The California Endowment’s Pipeline, Profession, and Practice: Community-Based Dental Education program, with the goal of improving access to dental care for the underserved, provided grants to fifteen dental schools to incorporate increased community-based education for students into their curricula, as well as
to increase the number of underrepresented minority and low-income students. Many of these schools are near or over the goal recommended by this program of having senior dental students complete a minimum sixty days of community-based rotations. This program has contributed to the movement towards service-learning and community-based education in other schools as well.

Promoting Civic Engagement

It is imperative in a democratic society to sustain civic engagement as active citizenship. Casey et al. stated that civic engagement goes beyond voting to “citizens’ taking opportunities to become actively involved in defining and tackling . . . the problems of their communities and improving their quality of life” (pp. 6–7). Mofidi et al. argued that dentists must not only be clinically competent but also be “knowledgeable about community health issues and possess an ethic of service and social responsibility” (p. 515).

Does dental education produce a graduate who is civicly engaged or even aware of his or her responsibility as a professional? Haden et al., in an article commissioned by the ADEA CCI, stated that “the most serious issue facing health care today, including oral health care, is providing care for an increasing population of unserved, underserved, and uninsured patients who lack access to oral health care and face rising health care costs” (p. 1266). The 2006 ADEA survey of dental school seniors found that nearly 20 percent of those responding disagreed with the statement that access to oral health care was a societal good or right and 24 percent did not believe that access to oral health care in the United States is a problem. When asked if “ensuring and providing care to all segments of society are an ethical and professional obligation,” over 15 percent disagreed, and over 22 percent disagreed with the statement that “everyone is entitled to receive basic oral health care regardless of the ability to pay.” Although the percentages of students who disagreed with these statements decreased slightly from the 2005 survey, the answers may indicate that dental schools face challenges in their efforts to graduate culturally competent, socially responsible practitioners and may need to modify their curricula to accomplish this goal.

There are calls across the health professions for academic health centers to do more to educate all future practitioners to better meet the needs of society by fostering idealism, cultural competence, and social responsibility. It is well documented that medical students often enter medical training with traits of idealism, which include compassion, humanitarianism, and desire to work with the underserved, yet these traits decline by the time they progress through years of medical training. Well-structured, community-based rotations, particularly interprofessional or multidisciplinary ones, starting early and continuing throughout medical school and residency training, have the potential to nurture and even increase idealistic attitudes. For example, interrelated traits of idealism, humanitarianism, and professionalism were increased in students who participated in a long-established international service-learning elective at the University of Texas Health Science Center at Galveston Medical Branch in collaboration with the University of Texas Health Science Center at Houston Dental Branch. There is some evidence from efforts such as the WWAMI program in medical education that these types of programs increase the likelihood that graduates will choose to work in underserved areas.

Haden et al. observed that “the dental profession, including academic dental institutions, as the moral community entrusted by society with knowledge and skill about oral health, has the duty to lead the effort to ensure access for all Americans” (p. 568). Ozar and Sokol, as well as Haden et al., argued that, in a just or good society, all human beings should have access to a uniform standard of basic oral health care as a human right, especially in view of its importance to overall health. Professionalism includes an obligation to work for society’s welfare or the common good, which includes general health. Dental schools do not always sufficiently emphasize “teaching the values that prepare the student to enter a morally responsible profession” (p. 567). Gadbury-Amyot et al. found that well-structured service-learning programs can help to inculcate in students the sense of ethics and professionalism needed by socially responsible practitioners.

Yoder stated that “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” and proposes that “these insights can be taught most effectively through experiential learning in partnership with the community” (p. 115).
Addressing Societal Needs

Higher education has historically had a commitment to service. There has been advocacy in recent years for higher education to strengthen this commitment and become more accountable to the community and address the needs of society, away from the isolation of the “ivory tower.” At a conference in 2004 on reforming dental education, the Santa Fe Group, a public health think tank of leaders in dentistry focusing on oral health, stated that the mission of the oral health education system of the United States is to “serve society by educating and training a diverse workforce capable of meeting the nation’s need for oral health care.” The 2004 report of the Santa Fe Group goes on to say that this workforce must engage in a broad range of activities and that it must have “the knowledge, skills, attitudes, and values needed for practice within interdisciplinary health care teams . . . to provide complex, integrative, high-quality care for patients, families, and communities. To do less is an abrogation of the professional covenant extended to dentistry by society.”

Davis et al. described the value of service-learning as an alternative to traditional school-based education in meeting several societal needs, including “developing cultural competencies in their graduates and an appreciation for public health issues” and “assisting in prevention, public health, and public education effort to reduce health disparities in vulnerable populations” (p. 1010). These authors concluded that service-learning provides opportunities to build partnerships between campus and community and thus strengthen the social contract between the profession and society in ways that are visible to the public.

The hope is that the new schools and changes in the curricula of existing schools that are centered on an ethic of community service will be successful in helping to solve the dentist distribution and access to care problems. Simply increasing class sizes and numbers of dental schools without incorporating more well-structured opportunities for community-based rotations and service-learning may not result in improvements in these areas. In 2006, only 4.8 percent of U.S. dental school graduates reported plans to practice in an urban/rural area with less than 10,000 population. According to the 2000 U.S. census, approximately 21 percent of the U.S population is rural. Although there are various classifications of rural, these numbers indicate a distribution problem. An encouraging indication that well-structured service-learning programs can help is that more than 25 percent of the first graduating classes from the ASDOH began their first year of practice in community health centers. In 2007, 58 percent of the new graduates of the West Virginia University School of Dentistry went to rural and underserved areas of that state to practice. All graduates of the University of Iowa College of Dentistry between 1992 and 2002 participated in two five-week community-based rotations and reported that the experience was valuable and contributed to their comfort levels in treating specific underserved populations. Interestingly, years since graduation, gender, and program combination did not seem to be significant. More long-term prospective studies that measure the influence on career choice, location, and involvement in working with the underserved are needed.

Meeting Challenges of Incorporating Service-Learning into Dental Education

Some skeptics who say that service-learning weakens the curriculum need to be convinced that worthwhile learning does not occur only within the walls of academic institutions. However, faculty members who are involved with implementation of service-learning programs contend that the effort students put into preparing for, participating in, and reflecting on a well-structured service-learning program can actually make these programs more rigorous than traditional lecture classes or requirement-based clinical curricula. A group of students at the University of Medicine and Dentistry of New Jersey-New Jersey Dental School who had all their clinical experiences in health care settings away from the school felt much more confident in providing patient care and clinical preparedness than did students in the traditional school-based clinical curriculum and did equally as well or better on examinations.

Faculty training and development must be made a priority for service-learning to become an integral part of the curriculum. To increase participation in service-learning by the faculty, the institution must support the full scope of academic work in service-learning by acknowledging the importance of the interrelated areas of scholarship of discovery, integration, application, teaching, and engagement. These aspects of scholarship must be valued in the promo-
Faculty members must be trained and supported in service-learning, so they do not have to choose between career advancement and community-engaged scholarship. There are current initiatives such as the Faculty for Engaged Scholarship being undertaken by the CCPh in partnership with the University of Minnesota and University of North Carolina at Chapel Hill, as well as the Community-Engaged Scholarship for Health Collaborative, a group of eight health professions schools. Aims of these groups include designing models for faculty training and development and setting up external peer review for use by schools considering community-engaged faculty for promotion and/or tenure. Students need to learn to work effectively in teams with allied dental personnel and other medical and social service professionals. Combining service-learning and interprofessional learning is ideal and constitutes a growing trend in higher education. The Macy Study recommends that multidisciplinary education be the norm in dentistry. Designing and implementing interprofessional service-learning programs can be challenging. Though increasingly recommended, they are one of the least-used types of service-learning program. The various health professions schools in academic health centers have traditionally operated in separate spheres within the same institution with minimal interaction among their students. In the dental profession itself, there are barriers to collaboration such as scheduling conflicts between dental and dental hygiene programs and separate curricula. Yet, there is great need for all members of the dental profession, as well as others, to work together for the benefit of society.

Service-learning programs can provide opportunities for dental students to work with other professions in community clinics. For instance, first-year dental students can work in admissions for community medical clinics, seeing first-hand a broader picture of the health care system. WVU dental students are housed with other health professions students during six-week rural rotations and have weekly required interprofessional activities. It has been my experience that some of the most successful interprofessional service-learning has taken place in international settings, perhaps because the participants are culturally isolated and immersed in an intensive experience in which they have no choice but to work in teams if they are going to help solve pressing human needs.

Students realize they can accomplish more by working together. In collaboration with other health care educators, I participated in an unpublished study, presented at the Southern Group on Educational Affairs in 2007 (a conference sponsored by the Association of American Medical Colleges), that found some evidence that students in interprofessional programs gained awareness of the need for interprofessional cooperation to improve patient outcomes, realized the value of other professions, and increased their understanding of other practitioners’ competencies. This study assessed students’ perspectives after they participated in a service-learning program in rural Nicaragua that included nursing, nurse practitioner, and medical students at the University of Texas Health Science Center at Galveston Medical Branch and dental students from the University of Texas Health Science Center at Houston Dental Branch. In another study, which assessed the University of Louisville’s international service-learning program in Belize, the author reported that students in this program developed better understanding of the interconnectedness and value of other disciplines. Disciplines represented in this program included medicine, dentistry, nursing, communication, engineering, sociology, and disaster mitigation, which is part of the urban affairs program. The models used for interprofessional education in international settings could be translated to communities served by academic health centers in the United States.

Time usually needs to be found, or created, in the curriculum for community-based service-learning programs that are long enough in duration to allow meaningful learning experiences for students. Programs that are too short—less than three weeks—may not be long enough to build skills and change attitudes and may even increase negative attitudes about participating in community service and different cultural, ethnic, or socioeconomic groups. Other than short programs such as health fairs in which students are deeply involved with planning, implementing, and evaluating, the time span must be long enough to foster development of students’ skills and understanding and allow time for students to reflect on their experiences and identify “lessons learned.” To provide students with the needed “time on task,” schools need to be willing to eliminate redundancies and out-of-date subject matter throughout the curriculum. For students to have service-learning experiences early in their dental education as is recommended, preclinical, clinical, and didactic courses may need to be reshaped and combined to form a more integrated and cohesive curriculum. Courses could be organized by interdepartmental teams.
rather than by departments, as recommended by the WWAMI program. Summers can be utilized: for instance, the RIDE program sends students on a four- to six-week rotation in the summer before their second year. The University of North Carolina at Chapel Hill School of Dentistry offers a variety of one-month or longer summer service-learning programs located throughout the United States to students beginning after the first year. The rotations are not necessarily clinical, but provide opportunities for students to be involved in the community as early as possible. It has been my observation that some schools, such as the University of Illinois at Chicago (UIC), have modified traditional preclinical courses, moving them into the clinic and simulating actual patient care from the beginning, freeing up not only time but physical space. In the clinic, multilevel teams of students, along with dental auxiliary personnel and faculty members, can provide comprehensive care for patients while other students are working outside the school. In these ways, students may become competent at patient care earlier, providing more time and opportunity for service-learning.

In this time of serious budget constraints, one objection often voiced to taking students out of the school-based clinic for more days is the fear of lost revenue to the school because of fewer patient visits. Bean et al., however, reported that revenue at the clinic at The Ohio State University College of Dentistry actually increased after implementation of forty days of offsite rotations for senior dental students, possibly because of greater student efficiency resulting from increased skill and confidence gained in the community sites. Providing students with opportunities to deliver patient care and have associated learning experiences outside the main dental school clinic can also reduce clinic overhead and administrative costs to offset any loss in clinic revenue, and it frees up clinic chairs for other students.

Another fear is that of not being able to maintain funding or key personnel to sustain the school-community partnership. Many times when programs have been discontinued, it was due to these issues rather than a belief that the program was not beneficial. Private practice preceptors in underserved areas have been particularly successful and often have fewer funding problems.

Dental schools are facing an increasing shortage of full-time faculty who are doing more and more as budgets tighten and disparities between private practice and faculty salaries widen, contributing to a “brain drain” from academia to the private sector in the past decade. Faculty fears of not having time for service-learning make it advantageous to partner with community dentists who can receive adjunct faculty appointments, go through the same credentialing process as school faculty members, meet at least annually with the school-based faculty for review of educational goals and calibration for student evaluation, and have access to benefits such as continuing education, training websites, and consultations with the school-based faculty. This can free up time for faculty at the school to have more quality time working with fewer students at a time on procedures such as crowns and dentures, which may not be done at some community sites.

It is my experience that dental students report greater satisfaction and desire to do more service-learning, but they ideally need to receive credit for their work if the dental school has minimum essential experiences that are required for graduation. Credit and grades can be given when preceptors are considered faculty and calibrated with the school faculty. Otherwise, students and faculty members may perceive service-learning as taking up time they could be using for their real work. If students get no academic credit except for checking off a required rotation, they may be less than enthusiastic about offsite rotations. Schools can eliminate required numbers of procedures or points, in favor of school-based comprehensive care and extramural community-based programs. Some community rotations are long enough that students can perform comprehensive care for patients while on rotation. Criteria for student selection can also make a difference: the Arizona School of Dentistry & Oral Health (ASDOH) makes the first cut of applicants based on their past number of community service hours, thus attracting the type of student who desires more service-learning opportunities. This school also utilizes two types of clinical education sites besides the school-based clinic: those that are primarily for clinical rotations, focusing on completion of essential experiences (procedures) to school standards; and those at which the primary objective is providing a broader contextual learning experience in a community.

Some faculty members express concern that quality of education and treatment performed at community sites may not meet the same quality standards as those at the school. A standardized site selection and ongoing assessment process with specific criteria is utilized by both the University of Illinois at Chicago and ASDOH. Adjunct faculty preceptors go through credentialing and understand the school...
philosophy. Sites submit an application outlining the clinical experiences students will be exposed to and describing the clinical facilities, level of staff support, policies, and procedures. Regular site visits are made, and feedback from students is followed up on when necessary. Site preceptors understand what students learn in dental school and can explain to students the reasons for differences in practice as well as help students reflect upon those differences. This is part of the students’ experiential learning in a real-world context.

Community and political leaders must be made aware that dental schools and the dental profession cannot meet all unmet oral health care needs alone. Students should not be considered as free labor, with no educational benefit in return. By definition, service-learning is mutually beneficial and requires ongoing evaluation by all parties involved.

The location of some sites geographically distant from the school presents challenges. Most dental schools are in cities, but some of the areas of greatest need, and greatest need for students to experience, are rural or remote. Issues that need to be addressed and planned for include coursework, transportation, insurance, lodging, and needs of student families. Schools can ask sites that are far away to provide appropriate housing for students. Sites may provide a travel allowance to encourage students to choose their locations. Students can attend lectures via streaming video or do coursework online. Patient information sharing between student and school can be implemented through electronic patient records. Students can choose and be matched with a variety of programs based on their interests and needs. Schools may have sites in their own and surrounding states only, or in many states or countries.

Conclusion

The survey of North American dental school curricula by Kassebaum et al. found that most dental schools use some type of community-based rotations in their clinical curricula, although these experiences primarily focus on delivery of patient care without associated educational activities that engage the students with the community served by the clinic. These rotations may be limited in their impact if they do not include key elements of service-learning. It is important to realize that terms such as community-based education, volunteerism, internships, and community service do not necessarily include all or any of the elements of service-learning, although service-learning is by definition community-based. Service-learning differs from other types of programs, in that it is mutually beneficial to the service provider and the recipient, and there are intentional learning goals for the service provider. It is not just an occasional volunteer program, an add-on to the curriculum, or an opportunity to log a set number of community service hours in order to fulfill a requirement. Service-learning is designed to be an integral part of the curriculum.

Dental schools need to be clear on their philosophy of education. It is my experience that sometimes the stated philosophy, if it is known at all by the faculty, is not upheld by actual practices of the institution, or the philosophy may not be consistent with emerging societal expectations and needs. In most schools, there is a need to examine and reframe, or even totally define for the first time, the school’s overall educational philosophy. Many of the educational reform recommendations over the past twenty years call for academic health centers to train practitioners who will be able to address the current and future needs of society. Service-learning, when made an integral part of the curriculum, can help address these needs.

A review of the literature indicates that some dental schools are in the process of making a substantial paradigm shift in their approach to preparing their students to function as entry-level general dentists. Service-learning, with thoughtful planning, implementation, and evaluation, is one much-needed way to make dental education more meaningful to a new generation of students by placing it into a larger and broader real-world context—increasing student learning, civic engagement of future dental professionals, and thereby the health of society. There is still much room for research on and innovation in the use of service-learning at all levels of dental education to show how it affects graduates’ long-term competence, critical thinking abilities, management abilities, career choices, and community service involvement, as well as how it affects the institution and how it affects society in the areas of public health and access to care.

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REFERENCES

38. Personal communication, R Meckstroth, Chair, Department of Dental Practice and Rural Health, West Virginia University School of Dentistry, January 2008.


57. Personal communication, W Cottam, Associate Dean of Community Partnerships, K Smith, Associate Dean for Education, and J Woldt, Associate Dean for Academic Assessment, Arizona School of Dentistry & Oral Health, April 1, 2008.

