E-Service-Learning: The Evolution of Service-Learning to Engage a Growing Online Student Population

Leora S. Waldner, Sue Y. McGorry, and Murray C. Widener

Abstract

E-service-learning (electronic service-learning)—a service-learning course wherein the instruction and/or the service occurs online—holds massive potential to transform both service-learning and online learning by freeing service-learning from geographical constraints and by equipping online learning with a powerful and much-needed tool to promote engagement. Students are increasingly pursuing their education online, yet few are exposed to service-learning in their online coursework. To remain relevant, service-learning must also go online. How do we transition service-learning from high-touch to high-tech? E-service-learning provides the answer. Through an extensive literature review, this article identifies four emerging types of e-service-learning endeavors and presents best practices. Armed with these best practices, we call on our colleagues to increasingly integrate e-service-learning into their online courses and to study the outcomes of such efforts to ensure the relevance of service-learning in the 21st century.

E-Service-Learning: Breaking Through the Barrier

Service-learning is a powerful tool to promote student and civic engagement. Service-learning can produce important benefits for students (enhanced civic engagement and/or learning), the community partner (useful products), the instructor (service opportunities for tenure), and the university itself (positive community relations). Service-learning, however, risks being left behind as instructors increasingly transition to online learning platforms. Anecdotal observations of colleagues, even those highly committed to service-learning, suggest that some abandon their service-learning efforts when migrating to teaching online because they view the online medium as a barrier to service-learning.

In fact, online learning is a *facilitator* rather than a barrier to service-learning. E-service-learning holds the potential to transform both service-learning and online learning by freeing service-learning from geographical constraints, and by equipping online learning with a tool to promote engagement.

Thus, e-service-learning is not a mere pedagogical curiosity; rather, it is a key to the future of service-learning.

To break through the perceived barrier, this essay reviews the literature on the embryonic e-service-learning medium. Though the literature is sparse, four distinct types of e-service-learning have emerged, each with unique characteristics and outcomes. Potential best practices and limitations were culled from the literature review to inform those considering use of one of four types of e-service-learning.

What is Service-Learning and E-Service-Learning?

Service-Learning

Service-learning allows students to learn by doing, connecting theory with practice. It is a method of learning through active participation in organized experiences that meet community needs *(Perkins, 1994)*. Bringle and Hatcher *(1996)* defined service-learning as "credit bearing educational experience" in which students "gain further understanding of course content, a broader appreciation of the discipline, and an enhanced sense of civic responsibility" *(p. 222)*. Service-learning involves course assignments that give students the opportunity to apply knowledge and skills taught in the classroom to projects that benefit the community. Service-learning evolved, in part, from core assumptions of the educational philosopher and theorist John Dewey *(1916, 1939)*, who advocated learning by doing.

Service-learning can produce benefits for the students, the community partners, the participating faculty members, and the university itself. Some scholars have identified positive impacts on academic learning *(Astin & Sax, 1998)*; the ability to apply knowledge in practical settings *(Kendrick, 1996)*; and the enhancement of critical analysis and other academic skills *(Eyler & Giles, 1999)*. Service-learning also provides an avenue for meaningful discipline-based faculty service. Eyler, Giles, Stenson, and Gray's *(2001)* literature review found numerous additional benefits, including personal outcomes, such as moral development or enhanced personal efficacy and leadership skills *(Astin & Sax, 1998)*, and social outcomes, such as a sense of social responsibility *(Mabry, 1998)*, commitment to service *(Eyler & Giles, 1999)*, and increased community involvement after graduation *(Astin, Sax, & Avalos, 1999)*.

Others have found enhanced career development and enhanced relationships with the institution, including stronger faculty relationships, as well as improved student satisfaction and increased

student retention *(Astin & Sax, 1998)*. Faculty benefits also have been identified, such as higher satisfaction with the quality of student learning *(Berson & Younkin, 1998)* and commitment to research *(Driscoll, Gelmon, Holland, & Kerrigan, 1996)*. Finally, community benefits such as community partner satisfaction, and development of useful products or services may occur *(Killian, 2004)*. The service-learning projects can enhance community relationships *(Driscoll et al., 1996)*.

E-Service-Learning

As we define it, e-service-learning occurs when the instructional component, the service component, or both are conducted online. For example, students in an online grant-writing class might help write grant proposals for a nonprofit community partner. E-service-learning overlaps to some degree with the concept of service-eLearning, which was explored by Dailey-Hebert, Donnelli-Sallee, and DiPadova-Stocks *(2008)*. They describe service-eLearning as "an integrative pedagogy that engages learners through technology in civic inquiry, service, reflection and action" *(p. 1)*.

The rationale for e-service-learning.

It is important to study and encourage e-service-learning because online learning has grown significantly in the last decade. The average annual growth rate of online enrollments in the United States between 2003 and 2009 was nearly 20% in higher learning institutions *(Allen & Seaman, 2009)*. In fact, in 2010, 63% of all traditional schools agreed that online education was critical to their future class offerings. Over 5.6 million students are currently enrolled in online courses with U.S. universities *(Allen & Seaman, 2010)*. These numbers indicate a 17% increase in online enrollment since 2008, and suggest that online learning will play a critical role in education in the future *(Allen & Seaman, 2009)*.

According to Allen and Seaman *(2010)*, the growth of the online student body has exceeded the growth of on-site students, with a 21% increase in online enrollment versus a less than 2% increase in on-site enrollment from 2008 to 2009. Nonetheless, e-service-learning remains rare. The pace of growth of service-learning offerings online has not kept pace with the growth of the online student population. Because few schools or instructors are using e-service-learning, the vast majority of online students do not receive the benefits of service-learning. Dailey-Hebert et al.

(2008) suggest that a movement to electronic-service-learning may force some service-learning practitioners to abandon their service-learning endeavors if they cannot transition successfully online.

The benefits of e-service-learning.

E-service-learning is an ideal marriage of sorts because it overcomes limitations of both service-learning and online learning. E-service-learning frees service-learning from place-based access or geographical constraints. E-service-learning also overcomes what some consider a key limitation to online learning—a perceived lack of interaction.

Another benefit is access. Strait and Sauer *(2004)* note that "Because online students tend not to be the traditional age of on-campus students and usually work a 40-hour week in addition to going to school, access to a community partner can be a challenge" *(p. 1)*. Access to a community partner becomes a moot point in an online environment in cases where the service component occurs online. E-service-learning also can engage populations that otherwise may be unable to participate in a service-learning activity, such as the disabled *(Malvey, Hamby, & Fottler, 2006)*, rural populations, those without a higher education learning institution nearby *(Strait & Hamerlinck, 2010)*, or even shy or introverted individuals *(Seifer & Mihalynuk, 2005)*. When freed of place-based constraints, e-service-learning might include regional, national, or even global partners for service projects *(Malvey et al., 2006)*.

Malvey et al. *(2006)*, however, note that e-service-learning students "will likely miss out on the spontaneity and excitement of events by not being physically onsite" *(p. 191)*. Their concern is appropriate. If students conduct their service online, do they miss out on critical networking, organizational dynamics, and other learning experiences available to students conducting their service physically on site? Future studies should consider this and similar questions. Research should also be conducted to compare the outcomes of e-service-learning to those in traditional service-learning experiences, especially in areas related to performance differences in learning outcomes, civic engagement, professional development, and more.

E-service-learning overcomes major online learning limitations.

Online learning is often plagued with a perceived lack of interaction and engagement *(Gaytan & McEwen, 2007; Hill, Song, & West, 2009; Muirhead, 2004; Swan, 2002)*. E-service-learning can

provide an antidote by enhancing engagement in online courses. Bennett and Green *(2001)* suggest that service-learning and online instruction can have a "symbiotic educational relationship" *(p. 491)* because an online course allows many individuals who could not otherwise come to class to engage in service-learning. Moreover, service-learning helps overcome the apparent limitation of online instruction, specifically, the "lack of opportunity to practice and demonstrate knowledge and skills, lack of opportunities to process these practical experiences with course instructors, and access to evaluate feedback as course material is transferred to practical application." Thus, they aptly note that "These perceived weaknesses may actually become course strengths when online instruction is combined with service-learning" *(p. 497)*.

Those who study online learning environments call for techniques to enhance engagement. E-service-learning answers this call. For example, Conrad and Donaldson *(2004)* found that success in online courses demands students be engaged in order to capitalize upon the learning opportunity, and to solidify student learning of concepts. In other words, students cannot simply log in to an online service-learning course and read a powerpoint, or log in and listen to audio files. The instructor must utilize course management software features effectively to actively engage students in the learning process and to engage students with others in the course. Conrad and Donaldson observed that key elements of engaged learning in an online course include students establishing their own learning goals, students teaming with others, and students exploring resources (whether online or elsewhere). Additionally, instructors must provide integrated multidisciplinary tasks that have real-world applications, as well as deliverables to "clients" so that students are connecting with external communities. Finally, continual performance-based assessment is critical to providing a comprehensive learning experience. E-service-learning addresses these elements by providing meaningful questions, by connecting to real-world issues, and by creating deliverables for the external community partner(s).

Lehman and Conceição *(2010)* note that self-reflection is critical to successful online learning. Self-reflection enables students to understand their role in the online environment while becoming intimate with project variables, owners, and recipients of the service-learning experience. Reflection is also an important aspect of the service-learning process because it enables students to connect thought and action while encouraging higher order thinking skills

such as analysis, comprehension, problem solving, and evaluation *(Rama, Ravencroft, Wolcott and Zlotkowski, 2000)*.

Mills *(2001)* provides an example of how to capitalize on reflection as a best practice for both service-learning and online learning. He discovered that quality reflection enables students to contemplate their own experience while simultaneously building and growing community with other students in the course. He utilized web-based journaling as a medium for feedback, encouragement, and questioning. Students are engaged on a daily basis, contemplating their own thoughts and actions as well as those of others. Not only does web-based journaling address student daily experience, it empowers students to create community by developing their own creative space, providing the quality reflection necessary for successful service-learning.

Horton *(2006)* encourages use of simulations and games to engage the online learner, followed by carefully designed assessments to measure learning outcomes. This technique fosters confidence and team-building among students. He explores the use of embedded online software to facilitate such simulations. Best practices such as these can readily be used in an e-service-learning course. For example, in a business e-service-learning experience, students working for a client organization could use an online simulation to act as business owners making decisions about service pricing and managing the capital to support their decision making.

In summary, e-service-learning can be mutually beneficial for service-learning and online learning. This mutual benefit dovetails well with the findings of technological pedagogical content knowledge *(Mishra & Koehler, 2006)* researchers whose framework focuses on the intersection of technological, pedagogical, and content knowledge to emphasize the new knowledge base that lies in the intersection (Figure 1). Teachers who can master that intersection will have more effective expertise than those whose excellence lies strictly in the content discipline, strictly in the pedagogy (e.g., service-learning), or strictly in the technology (e.g., online learning techniques). To break through the barrier and effectively transition to e-service-learning, instructors must master and strategically use the relationship between content, pedagogy, and technology. Exploiting this relationship can free service-learning from geographical constraints and equip online learning with a tool to promote engagement on multiple levels.
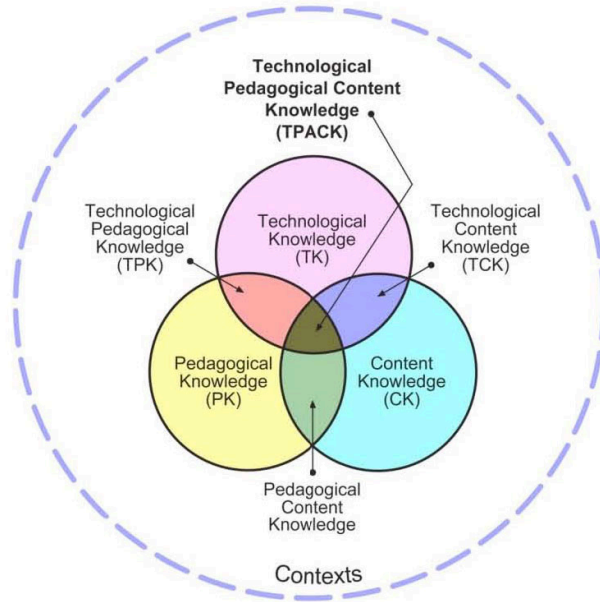
Figure 1. The realm of technological pedagogical content knowledge. Reprinted courtesy of http://tpack.org/.

Literature Review

The authors organized the literature review with the intersection of service-learning and online learning literatures in mind (Figure 2). They used a three-pronged approach (Figure 3) by performing a peer-reviewed electronic database search using Proquest Central (an online research database with over 3,820 titles from 1971 onward); a targeted journal search using archives of 10 journals dedicated exclusively to service-learning and online learning; and a comprehensive Internet keyword search using Google and Google Scholar.
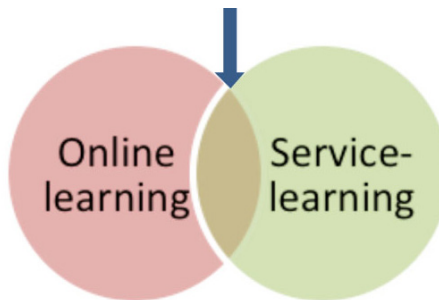

Figure 2. The focus of the literature review.

This strategy helped the authors to exhaustively comb the literature while overcoming the inherent indexing limitations of using a given electronic database.
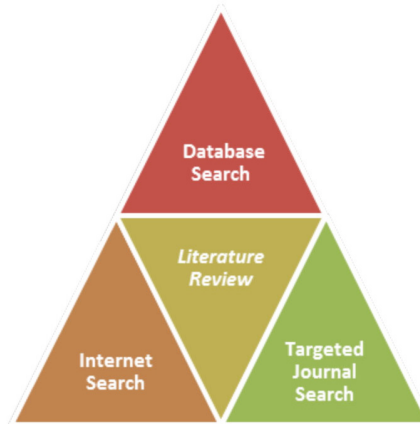

Figure 3. A three-pronged literature review.

Inclusion Criteria for the Literature Review

Initially the authors hoped to utilize peer-reviewed articles exclusively. The sheer lack of articles on the topic, however, necessitated a broader Internet search. As the exploration continued, the search expanded to include anecdotal case studies, conference papers, webinars, and materials marginally related to e-service-learning. Materials that did not involve the intersection of online learning and service-learning were excluded. For example, articles about techniques to enhance teamwork in online classes were excluded because they did not involve service-learning.

Search Process

The authors identified 14 search terms related to service-learning and online learning and used the terms as keyword searches in more than 20 combinations (see Figure 4). Each researcher searched the keyword combinations independently to maximize yield. Searches were limited to English-language resources.
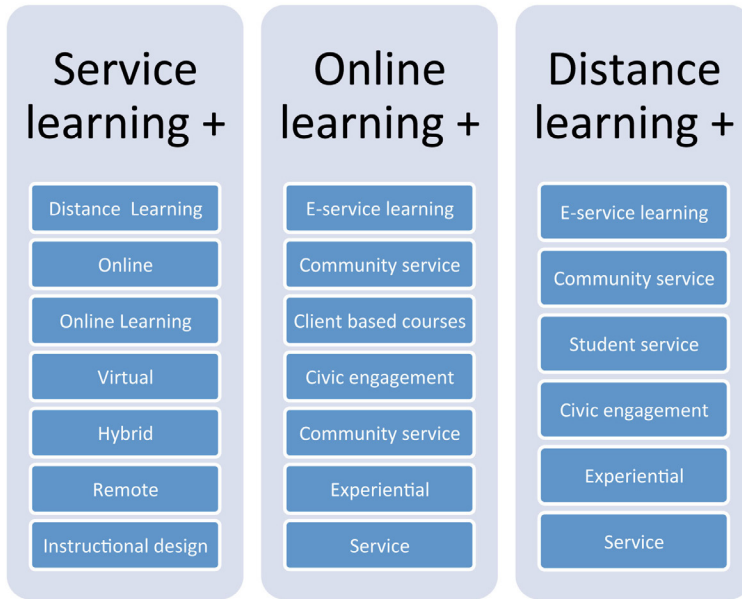
Figure 4. Combinations of keywords used in search criteria.

For the first phase of the literature review—the targeted journal search— the authors worked with two librarians to identify 10 journals dedicated primarily to either online learning (e.g., the *MERLOT Journal of Online Learning and Teaching*) or service-learning (e.g., the *Michigan Journal of Community Service Learning* (see the Appendix for a complete listing of the journals). The targeted journals were searched electronically using library databases. The researchers deployed a cross-search strategy, searching for service-learning keywords in the online learning journals, and online learning-related keywords in the service-learning journals. For journals not available electronically in the library databases, the authors did issue-by-issue searches of the digital archives where available on the journals' websites. In these cases, the researchers looked at the three most recent years of archive materials for each journal. The targeted journal search yielded only six relevant articles.

The second and third phase of the literature review—the internet search and Proquest Central peer-reviewed journal search—initially yielded hundreds of thousands of hits. These searches involved five stages:

- Stage 1. Use the keyword combinations to generate initial hits.

- Stage 2. Skim the hits for relevance.

- Stage 3. Open and peruse the material that met the inclusion criteria.

- Stage 4. Perform in-depth review of the resource to ensure relevance.

- Stage 5. Select and analyze core resources.

Stage 1 involved generating initial hits. Through the subsequent stages, the authors reduced the 100,000+ hits to 10 primary sources and one book related to e-service-learning. In Stage 2, investigators skimmed the first seven pages of each item searching for the relevant keywords. Stage 2 yielded approximately 1,260 resources. Stage 3, opening and perusing the material that met the inclusion criteria, yielded 320 resources. Stage 4 involved in-depth review to ensure relevance and yielded 74 resources. In the final stage, Stage 5, the investigators selected the core resources and carefully scrutinized them. The internet and ProQuest Central searches yielded 12 journal articles and one book.

Taken together, the targeted journal search yielded six articles, and the other two searches yielded 12 additional articles and a book. Thus, despite the liberal inclusion criteria, the three-phases of the literature review (targeted journal search, internet search, and ProQuest Central search) produced a total of 18 journal articles and a single book that could be considered primary sources genuinely related to e-service-learning.
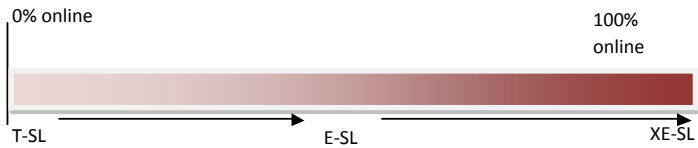
Limitations of the Literature Review

The key limitation of the literature review was the scarcity of literature related to e-service-learning. Since the search yielded few sources to examine, the authors were forced to treat sources of different quality and character equally (e.g., webinars and peer-reviewed journal articles), which will limit the generalizability of the identified best practices.

Hart *(1998)* suggests that it is not enough to merely find the literature. Rather, the true value of a literature review lies in characterizing and critiquing the literature. In this case, the literature review revealed little research on e-service-learning, and few peer-reviewed articles on the subject. Moreover, the resources located were largely anecdotal in nature. No rigorous cross-course studies of e-service-learning techniques and outcomes were located. Thoughtfully designed studies, both qualitative and quantitative, are needed to further understand and validate e-service-learning

outcomes. Future research should assess whether e-service-learning outcomes differ from traditional service-learning outcomes based on demographics (e.g., age, gender, race).

An Emerging E-Service-Learning Typology

Traditional service-learning, with both the instruction and service on site, is relatively well-studied and understood. At the other end of the spectrum (Figure 5) lies extreme e-service-learning, with 100% of both the instruction and service online *(Waldner, McGorry, & Widener, 2010)*. The nascent forms of e-service-learning that lie between the extremes of traditional service-learning and extreme e-service-learning have been neither characterized nor rigorously studied.

T-SL: traditional service-learning; E-SL: e-service learning; XE-SL: extreme e-service-learning

Source: Waldner et al., 2010.

Figure 5. The continuum of service-learning.

The literature review suggested that e-service-learning generally occurs in a hybrid model, with some aspect of instruction and/or service occurring online. The typology shown in Figure 6 provides a starting point for characterizing different forms of service-learning. The literature review revealed four types of e-service-learning: Hybrid Type I (service fully on site with teaching fully online), Hybrid Type II (service fully online with teaching fully on site), Hybrid Type III (a blended format with instruction and service partially online and partially on site), and extreme e-service-learning (100% of the instruction and service online). Users should be sensitive to these differences among the four types, because each type features different products, partners, and limitations.
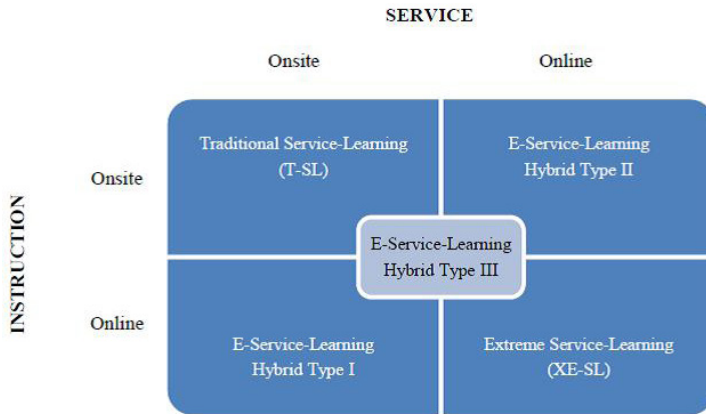
SERVICE

Onsite   Online

Figure 6. Types of e-service-learning.

Type I (Hybrid) E-Service-Learning: Instruction Online, Service on Site

In Hybrid Type I, the class is conducted fully online and the service is conducted on site. For example, Bennett and Green's *(2001)* online sport management course introduced the students via phone or e-mail to their respective community partners. Students selected from several opportunities identified by the instructor and local and regional contacts (e.g., recreation directors, athletic directors, university officials, area schools). Students engaged in approximately five hours of on-site service at a location specified by the community partners. All follow-up, reflection, and review of community partner satisfaction with the students' efforts occurred online.

Another example, the Service Oriented Field Experience, is described by Burton *(2003)*. In this case, the course was conducted online with the exception of a 10-day intensive group experience in Guatemala. Phase I of the course allowed students to design their intended service-learning project (e.g., a web page for sale of village goods over the internet, a review of health and medical conditions in a village). In the online learning component of Phase I, students were introduced to the community partner (a Guatemalan city) and were assigned specific service projects. In Phase II, the students traveled to Guatemala to conduct the service. In Phase III, the students returned home to finalize projects and to reflect upon their learning experiences.

Type II (Hybrid) E-Service-Learning: Instruction on Site, Service Online

In Hybrid Type II e-service-learning, the course is conducted on site and the service is conducted fully online, usually with building online resources as the service component. For example, Mosley *(2005)* took the development of websites into the service-learning realm by requiring on-site students in her Web Design for Non-Profit Organizations course to create a website for the local school district. The course, offered through the School of Computer Science and Information Systems, required students to define a website mission and target user population, collect user requirements, design the web pages, perform usability testing, implement and manage the website successfully, and then reflect on the service experience.

Lazar and Preece *(1999)* incorporated service-learning into their information systems course in online communities by requiring students to develop online communities. Though the instruction was on site, the service was provided online through development of the online community (an online community is a group of people with similar interests who communicate using computer networks and software such as an electronic mailing list, chat room, bulletin board, etc.). Course objectives included understanding the social and technical issues contributing to successful online communities. Students chose a group that interested them and worked with community members from the group to form a partnership and to design the project. Examples of communities built included a Down syndrome advocacy group, an academic quiz bowl, and an anesthesiologist community.

Type III (Hybrid) E-Service-Learning: Instruction and/or Service Partially on Site and Partially Online

In Hybrid Type III e-service-learning, instruction may be both on site and online, as may the service component. Strait and Jones' *(2009)* Each One Teach One program used an innovative combination of on-site instruction and online communication to provide mentoring at the Martin Luther King Science and Technology Magnet School in New Orleans, Louisiana. The program consisted of an online service-learning and mentoring program between students at Hamline University and Avalon High School in St. Paul, Minnesota, and students in Grades 5 through 9 at the New Orleans school. The Hamline and Avalon students were paired to

lead groups of students as a team. Initial contact occurred by phone as well as online. Subsequently, students traveled to New Orleans for a 10-day on-site service working session.

Killian *(2004)* experimented with classes that combined traditional face-to-face methods with online and service-learning. Phase I of the course occurred on site; Phase II involved service conducted online with online student/teacher interaction to facilitate coordination between the student groups and to maintain instructor oversight of the process. Students developed grant proposals, strategic plans, and best practices by doing online research. In Phase III, the students reconvened on site for presentation of the final product to the client. In this case, therefore, instruction and service transitioned from on site to online, and then back to on site.

Blackwell *(2008)* combined an on-site clinical experience with online and on-site instruction to provide students the opportunity to practice delivery of care to groups, and to practice holistic nursing care in a community-based nursing education program. Five of the credit hours occurred on site, and four were clinic based. The online course management system complemented the on-site instruction by allowing students to access syllabi, assignments, and laboratory outlines. For the service portion, students completed rotations in public health nursing (e.g., primary care clinics in public schools), community mental health nursing (e.g., psychiatric crisis units in a county health department), or long-term care.

Bemidji State University's teacher training program offered courses with on-site and online components to prepare teachers for service. The university partnered with the Minnesota Satellite and Technology Center, and a number of other groups, to develop a blended-technologies K-9 elementary education program for rural and urban students who could not attend a campus-based teacher education program. The program, called Distributed Learning in Teacher Education (DLiTE), featured weekend face-to-face classroom experiences with professors twice during the semester along with online instruction through an interactive course management system. The DLiTE curriculum included service-learning in four courses: Pedagogy, Language Arts I, Language Arts III, and Science Methods. For example, one Language Arts course required students to arrange individual e-service placements at organizations such as summer school programs and local libraries. One student in a library placement conducted a needs assessment on elementary science books and created a system to better introduce new books to local children. The project led to a 45% increase in the library's book check-out *(Strait & Sauer, 2004)*.

In a marketing course, McGorry *(2006)* tasked students with developing a marketing research plan for a local historical organization. Students met on site and online with the client throughout the semester. The course was conducted both online and in the classroom, so students were meeting with the instructor face-to-face at least once a week. Feedback from students indicated that they appreciated the face-to-face contact with both the instructor and the client. Students also indicated that the virtual chat sessions were important for maintaining productive client communication. McGorry noted that student performance in the course was not significantly different from that in other marketing research courses offered completely online or in the traditional face-to-face format.

Type IV (Extreme) E-Service-Learning: Instruction and Service 100% Online

In extreme e-service-learning, both the course and service are conducted online. There is no on-site component *(Waldner et al., 2010)*. Examples discussed in Malvey et al. *(2006)* include a health care course that updated human resources policies and procedures for a not-for-profit acute care facility to ensure compliance with regulatory agencies. In the example, students first performed an audit of policies and procedures to assess regulatory compliance. Policies and procedures were posted online for students to review. Students then conducted interviews in chat rooms with senior and middle management staff. The students then presented their recommendations for revised policies and procedures on the discussion board. Malvey et al. also presented the example of a finance course that used a similar process to create a zero-based budget for a local county health department.

Hunter *(2007)* provides another description of 100% e-service-learning in an online marketing class in which undergraduate students developed marketing materials for a humane society in Alabama. Students were charged with conducting best practices research in marketing for a humane society, drafting deliverables, and creating finalized products. These final products included a brochure, a flier, a website, an advertisement for a holiday gift certificate, a template thank-you letter for pet adopters/donors, and a newspaper advertisement.

Waldner, Roberts, Widener, and Sullivan *(2011)* evaluated an extreme service-learning course that provided two valuable services, best practices research and a policy analysis for Fulton County, Georgia. The county had received a poor grade from the

Georgia Department of Community Health in regard to infant mortality. As part of their public policy course, the students researched best practices, and did a policy analysis on health disparity issues of concern to the county, such as infant mortality or childhood obesity. In this fully online course, students conferred with both the community partner and instructor using interactive real-time sessions in the course management system.

Discussion

Each type of e-service-learning may lend itself to different types of products and outcomes. For example, Hybrid Type II (instruction fully on site and service fully online) seems to be restricted to one particular discipline: information technology courses, such as web design courses. Hybrid Types I and III often feature some aspect of travel for service. Extreme service-learning, with 100% of the service and instruction online, occurs in client-based courses *(Waldner & Hunter, 2008)*, with students producing a limited product, such as a grant or policy analysis for the community partner.

These different types of e-service-learning may have radically different service or course learning outcomes. For example, one might expect less civic engagement in the extreme service-learning, with its limited product delivery, than in Hybrid Type I e-service-learning where students conduct on-site service, and are, thus, more immersed in the agency or community setting. Conversely, extreme service-learning courses might promote more professional development (e.g., students' ability to list grant writing or policy analysis on their resumes) than Hybrid Type I courses that involve a small amount of service-learning. Each type of e-service-learning may also face different limitations and require different techniques to optimize service-learning outcomes.

Best Practices for E-Service-Learning Courses

The literature review yielded 12 potential best practices related to technology, communication, and course design (Figure 7). Since the studies found in the literature review consisted primarily of anecdotal examples of a single course, cross-course studies will be needed to verify the usefulness of these techniques.
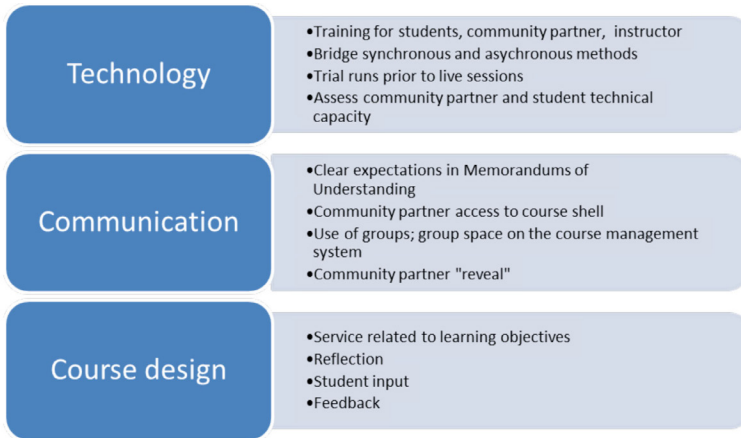
Technology	• Training for students, community partner, instructor • Bridge synchronous and asychronous methods • Trial runs prior to live sessions • Assess community partner and student technical capacity
Communication	• Clear expectations in Memorandums of Understanding • Community partner access to course shell • Use of groups; group space on the course management system • Community partner "reveal"
Course design	• Service related to learning objectives • Reflection • Student input • Feedback

Figure 7. E-service-learning best practices for technology, communication, and course design.

Technology: Training for Online Service-Learning

To maximize success in e-service-learning, training for all parties (instructor, students, the community partner, and the instructional design team) is critical. This applies not only to technology use, but also to service-learning best practices. Strait and Sauer *(2004)* observe that online learning is new for many faculty members, and conclude that these faculty members would benefit from online instructional technology techniques to maximize engagement. One example of such technology training is Virginia Tech University's Cyber-Serve Mini Grant program, which provides small grants to encourage integrating technology in service-learning *(Johnston, 1999)*.

Students may also require training in online service-learning techniques. Strait and Sauer *(2004)* suggest placing a special service-learning icon on the course home page to educate students about the service-learning process. They also note the importance of constructing distinct buttons on the course shell to avoid cognitive overload in students. Malvey et al. *(2006)* suggest that students and instructors need to have prior online course experience to maximize success, which implies that e-service-learning courses may not be appropriate as introductory courses. Malvey et al. further suggest that instructors specify equipment/software requirements, and assess student skills at the start of the course.

Community partner training is crucial for e-service-learning success, but may be complicated if the community partner and students use different software or hardware. Thus, it may be useful

to assess community partner capacity before starting a service-learning project online and to provide training if needed *(Seifer & Mihalynuk, 2005)*. The instructor and community partner should also test the technology prior to live sessions. It is also important to select a community partner that is open to technology *(Stoecker, Hilgendorf & Tryon, 2008; Waldner et al., 2010)*.

The success of e-service-learning relies on the instructional design or information technology team. Its standard practice of performing trial runs and technology tests also makes this team essential at the syllabus-development level *(Waldner et al., 2010)*. For these and other reasons, the instructional design team for the online course should be considered an integral fourth partner in the e-service-learning environment (Figure 8). Educating the instructional design team about service-learning may enhance buy-in and result in additional support. Traditional, on-site service-learning activities may also involve additional partners such as writing centers, technology resources, and library support, though instructors using on-site and online service-learning activities generally do not involve those services in course design to the extent of co-designing the syllabus for the course.
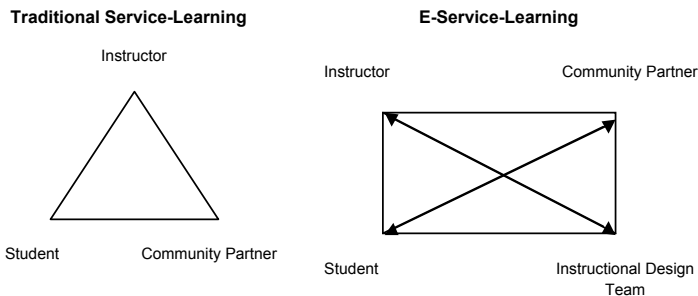

Figure 8. E-service-learning involves more partners than traditional service-learning.

Specific technologies used in e-service-learning include synchronous tools (e.g., audio and video teleconferencing), whiteboards, text-based chat rooms, and virtual classrooms. Asynchronous tools include internal course e-mail, discussion boards, bulletin boards, drop boxes, video streaming, and digital video production *(Malvey et al., 2006)*. Malvey et al. provide an example of a community partner using video streaming to give students a tour of the facility, introduce staff and students, initiate role-playing, and present background information on the problem to be solved. McGorry *(2006)* built proximity between students and

the community partner through chat sessions, discussion boards, e-mail, file exchange, and two-way visual meeting software. Hill and Harris *(2008)* utilized e-mail, discussion boards, group pages in the course management system, and word processing collaboration features (e.g., the Track Changes function in Microsoft Word). Strait and Sauer *(2004)* have suggested that technologies such as cell phone, wikis, online micro-blogging (e.g., Twitter), and holograms may play important roles in the future. Whatever the technology used, instructors must build a bridge between synchronous and asynchronous communications (e.g., archiving live video presentations for students in other time zones who cannot attend).

Communication

For effective e-service-learning, communication expectations should be clearly established. Bennett and Green *(2001)* suggest that contracts between an instructor and community partner can determine objectives, assessment instruments, feedback, and communication. Memorandums of understanding (MOUs) between students and instructors (or students and community partners) also can be beneficial. For example, an MOU could stipulate that the community partner make a firm commitment to meet with the class at pre-specified times, and to provide prompt feedback *(Hunter 2007; Malvey et al., 2006)*. Ideally, the community partner would be given access to the online classroom as an active participant.

Parameters for informal communication should also be addressed at the outset of an e-service-learning activity. McGorry *(2006)* suggests briefing the community partner about student behaviors (e.g., that students may e-mail a few days before a project is due, expecting responses with 24 hours). Conversely, students need to understand that unexpected factors such as furloughs or reorganizations may cause a delay on the community partner's part.

Forming student groups within a course can encourage interaction. For example, Hunter *(2007)* assigned students to groups within her online course. The groups conducted a service-learning project through live chats, discussion boards, teleconferences, phone calls, and e-mails among themselves and the community partner. One student volunteered as team leader to coordinate the group work, and to serve as key contact person with the community partner. Lazar and Preece *(1999)* used groups as a peer review mechanism, noting that "involving students in intensive and frequent review of each other's projects is extremely successful. Not only were the final designs superior because of the feedback, but the students learned

more about usability testing" *(p. 26)*. Dividing a course's students into groups can also reduce demand on community partner time (for example, the community partner can provide input on a few group papers rather than numerous individual papers).

A "community-partner reveal" phase early in the course is also important to establish student engagement and promote active communication. The community partner is revealed to the students in a real-time videoteleconferencing session, and the students have the opportunity to learn about the project and ask questions. In McGorry's *(2006)* survey of e-service-learning students, respondents indicated that an initial real-time chat, or an on-site meeting with a community partner, was critical in developing rapport with the community partner, and for understanding issues to be addressed in the projects.

As Hunter *(2007)* and Tabor *(2007)* note, the professor who uses an e-service-learning activity needs to remain actively engaged from start to finish, maintaining high visibility on discussion board forums, and providing ample feedback on online course assignments. Though professors in a traditional service-learning environment must also remain engaged, Tabor *(2007)* notes that students need even more feedback for online components of a course since they lack the immediate response of a classroom environment. Establishing clear channels of communication between professor and students is critical to prevent disengagement and confusion.

Course Design

In addition to the e-service-learning best practices related to technology and communication already described, instructors should also incorporate best practices from traditional service-learning courses. From their review of prior studies, Imperial, Perry, and Katula *(2007)* identified seven design principles to help facilitate success in traditional service-learning courses:

- explicit connections between the service activity and learning objectives,
- reflection,
- appropriate time commitment,
- student input,
- faculty commitment,
- perceptible impacts, and
- feedback loops.

These traditional service-learning course design principles are also relevant to e-service-learning courses. For example, the majority of e-service-learning courses found in the literature already incorporated reflection virtually through discussion board postings, blogs, or journals *(Hoover, Casile, & Hanke, 2008; Mills, 2001; Oravec, 2003; Strait & Sauer, 2004; Tabor, 2007)*.

Community-based service projects can serve as the foundation for an academic course, requiring students to apply formally acquired knowledge and skills to community problems and needs. Service-learning projects, however, must have clearly articulated learning objectives and address actual community needs, providing students with opportunities for ongoing guided reflection on their experiences through a combination of class discussions, writing, and presentations *(Eyler & Giles, 1999; Furco & Billig, 2002; Skinner & Chapman, 1999; Strage, 2004; Wilhite & Silver, 2005)*, whether the course is traditional service-learning or e-service-learning.

E-Service-Learning Limitations

E-service-learning courses have unique limitations, including technology issues, challenges in sustaining communication and interaction, and added workload for the instructor.

Technology

Lack of reliability in hardware or software represents the most significant limitation in e-service-learning instruction. As Malvey et al. *(2006)* bluntly note, "The technology that supports E-service-learning also may represent the biggest pitfall. Machines malfunction, and when the technology goes awry in an e-environment, the effect is exponential" *(p. 192)*.

In her study of online service-learning experiences, McGorry *(2006)* also noted that the majority of students had some contact with technical support due to server difficulties. Waldner et al. *(2010)* described encountering "bad techno-mojo" *(p. 843)*, or technical difficulties. Examples might include technical problems with sound feedback during live video teleconference sessions, or chatware freezing in the middle of a chat session. Student or community partner lack of compatible hardware or software may also be an issue *(Malvey et al., 2006)*. Many of these issues can be mitigated if there is an information technology support team. Information technology issues may diminish with future versions of software and hardware.

Inadequate technical and service-learning training of instructors, students, or community partners can also be a limitation of e-service-learning. Because e-service-learning fuses service and online learning, instructors must be competent in both service-learning and online teaching techniques. For this reason, Strait and Sauer *(2004)* recommend that instructors be proficient in online instruction before attempting to incorporate service-learning into their courses. Kahn et al. *(2008)* further suggest giving students a service-learning orientation at the start of the course. Community partners also need to be proficient in the technology in order to interact smoothly with students. To minimize technical issues, the instructional design team should help the instructor create training and orientation resources for both the students and the community.

Communication

Establishing and maintaining effective communication can be challenging in e-service-learning courses since the participants do not interact face-to-face. For example, the online format may make the community partner less accountable to the students and/or the instructor. Hunter *(2007)* noted that the community partner failed to respond to student e-mails for clarification and refused to provide the promised product feedback, causing a palpable decline in class morale. The e-service-learning format may also make the students less accountable to the community partner compared to students doing service-learning activities in traditional courses. Real-time virtual sessions, however, can help build solid relationships between the students and the community partner. Clear memorandums of understanding between the community partner and instructor and/or between the students and community partner can prevent some of these issues.

Other communication barriers can occur in the group collaboration process, and through schedule conflicts *(Hunter, 2007; Killian, 2004)*. Solid instructional design, including group spaces on the course management system and virtual chat software, can help prevent this. Killian notes that backup communication and material delivery strategies are important in the event that the technology fails.

Course Design: Instructor Workload

E-service-learning courses can require additional time and effort by the instructor, especially in coordinating with community partners. Extra duties may include arranging logistics, modifying

the online course to feature service-learning, and supervising course product development *(Waldner & Hunter, 2008)*. For example, Killian *(2004)* reported that e-service-learning courses required 25% more of her time compared to a traditional service learning course. E-service-learning courses also may increase student workload due to virtual meetings and product expectations.

Though e-service-learning presents unique limitations, these limitations can be overcome. Training of all participants cand minimize technological challenges. Solid course design and real-time synchronous virtual class sessions, along with clear discussion of expectations, can ease communication barriers. Instructors can address the additional student and instructor workload by explicitly acknowledging the student benefits of e-service-learning in terms of practical application and hands-on service.

Conclusion

Online learning is not a barrier to service-learning; rather, it can be a facilitator. E-service-learning—the marriage of online learning and service-learning—holds the potential to transform both endeavors by freeing service-learning from geographical constraints and by equipping online learning with a tool to promote engagement. Thus, e-service-learning is not a mere pedagogical curiosity. Rather, it is key to the future of service-learning. Without e-service-learning, online students will be unable to experience the stellar benefits of service-learning, which range from civic engagement to enhanced learning outcomes.

The literature review presented in this essay identified four emerging types of e-service-learning. Each type can have different outcomes, limitations, and best practices. Instructors should be sensitive to those differences.

An analysis of the literature revealed best practices for instructors to consider when designing an e-service-learning course. Best practices include providing training for the parties involved; coordinating technology options with the community partner; drafting contracts and memorandums of understanding for students and community partners; scheduling pre-set meeting times to enhance communication; and implementing strategies to facilitate group interaction (e.g., creating team spaces on the course management system).

Though e-service-learning activities can work well, they have their own unique set of limitations. The technology that enables e-service-learning courses also entails limitations (e.g., failures

in hardware or software, gaps in technological capacity between community partners and the students or the instructor). Other key limitations include lack of technology training for the instructors, students, and/or community partners. Facilitating genuine and sustained communication between the community partner members and the students, and between the instructor and the students, can also pose challenges.

Future activities that will help advance e-service-learning pedagogy include studies to better understand e-service-learning outcomes, seed funding for e-service-learning development or research, and e-service-learning fellows programs for faculty. These and other activities will help break through the technology barrier in order to effectively transition to an online service-learning platform.

Appendix: Titles in Targeted Journal Search

Education, Communication and Information (discontinued in 2005)

International Journal of Instructional Technology and Distance Learning

Journal of Educational Media (became *Learning, Media, and Technology* in 2004)

Journal of Higher Education

Journal of Public Affairs Education

MERLOT Journal of Online Learning and Teaching

Michigan Journal of Community Service Learning

Quarterly Review of Distance Education

The American Journal of Distance Education

The Virginia Tech Service Learning Center (before 2008)

References

Allen, E. I., & Seaman, J. (2009). *Learning on demand: Online education in the United States, 2009*. Retrieved from Sloan Consortium website: http://sloanconsortium.org/publications/survey/learning_on_demand_sr2010

Allen, E. I., & Seaman, J. (2010). *Class differences: Online education in the United States, 2010*. Retrieved from Sloan Consortium website: http://sloanconsortium.org/publications/survey/class_differences

Astin, A. W., & Sax, L. J. (1998). How undergraduates are affected by service participation. *Journal of College Student Development, 39*(3), 251–263.

Astin, A. W., Sax, L. J., & Avalos, J. (1999). Long-term effects of volunteerism during the undergraduate years. *The Review of Higher Education, 22*(2), 187–202.

Bennett, G., & Green, F. P. (2001). Promoting service learning via online instruction. *College Student Journal, 35*(4), 491–497.

Berson, J. S., & Younkin, W. F. (1998). *Doing well by doing good: A study of the effects of a service-learning experience on student success*. Paper presented at the American Society of Higher Education, Miami, FL.

Blackwell, C. W. (2008). Meeting the objectives of community-based nursing education. In A. Dailey-Hebert, E. Donnelli-Sallee, & L. DiPadova-Stocks (Eds.), *Service-eLearning: Educating for citizenship.* (pp. 87-94). Charlotte, NC: Information Age Publishing.

Bringle, R. G., & Hatcher, J. A. (1996). Implementing service learning in higher education. *Journal of Higher Education, 67*(2), 221–239.

Burton, E. (2003). Distance learning and service-learning in the accelerated format. *New Directions for Adult and Continuing Education, 2003*(97), 63–72.

Conrad, R., & Donaldson, J. A. (2004). *Engaging the online learner: Activities and resources for creative instruction*. San Francisco, CA: John Wiley & Sons, Jossey-Bass.

Dailey-Hebert, A., Donnelli-Sallee, E., & DiPadova-Stocks, L. (2008). *Service-eLearning: Educating for citizenship*. Charlotte, NC: Information Age Publishing.

Dewey, J. (1916). *Democracy and education*. New York, NY: Simon and Schuster.

Dewey, J. (1939). *Theory of valuation*. Chicago, IL: University of Chicago Press.

Driscoll, A., Gelmon, J., Holland, B., & Kerrigan, S. (1996). An assessment model for service-learning: Comprehensive case studies of impact on faculty, students, community, and institutions. *Michigan Journal of Community Service Learning, 3*(1), 66–71.

Eyler, J. S., & Giles, D. E., Jr. (1999). *Where's the learning in service-learning?* San Francisco, CA: Jossey-Bass.

Eyler, J., Giles, D. E., Jr., Stenson, C. M., & Gray, C. J. (2001). *At a glance: What we know about the effects of service-learning on college students, faculty, institutions and communities, 1993–2000: Third Edition*. Nashville, TN: Vanderbilt University.

Furco, A., & Billig, S. H. (2002). *Service-learning: The essence of the pedagogy*. Greenwich, CT: Information Age Publishing.

Gaytan, J., & McEwen, B. C. (2007). Effective online instructional and assessment strategies. *The American Journal of Distance Education, 2*(3), 117–132.

Hart, C. (1998). *Doing a literature review: Releasing the social science research imagination*. London, England: Sage.

Hill, S., & Harris, C. (2008). Service-eLearning and professional writing. In A. Dailey-Hebert, E. Donnelli-Sallee, & L. DiPadova-Stocks (Eds.), *Service-eLearning: Educating for citizenship*. (pp. 75-86). Charlotte, NC: Information Age Publishing.

Hill, J. R., Song, L., & West, R. E. (2009). Social learning theory and web-based learning environments: A review of research and discussion of implications. *The American Journal of Distance Education, 2*(1), 88–103.

Hoover, K. F., Casile, M., & Hanke, R. (2008). How discussion boards drive course concept mastery in service-eLearning. In A. Dailey-Hebert, E. Donnelli-Sallee, & L. DiPadova-Stocks (Eds.), *Service-eLearning: Educating for citizenship*, (pp. 59-74). Charlotte, NC: Information Age Publishing.

Horton, William. (2006). *E-learning by design*. San Francisco, CA: John Wiley & Sons.

Hunter, D. (2007). The virtual student/client experience. *Journal of American Academy of Business, 12*(1), 88–92.

Imperial, M. T., Perry, J. L., & Katula, M. C. (2007). Incorporating service learning into public affairs programs: Lessons from the literature. *Journal of Public Affairs Education, 13*(2), 243–264.

Johnston, S. N. (1999). Practicing community through technology. In J. Deramo (Ed.), *Best practices in cyber-serve: Integrating technology with service-learning instruction* (pp. 49–62). Blacksburg, VA: Virginia Tech Service-learning Center.

Kahn, H. E., Stelzner, S. M., Riner, M. E., Soto-Rojas, A. E., Henkle, J., Humberto, M. . . . Martinez-Mier, E. A. (2008). Creating international, multidisciplinary service-eLearning experiences. In A. Dailey-Hebert, E. Donnelli-Sallee, & L. DiPadova-Stocks (Eds.), *Service-eLearning: Educating for citizenship*, (pp. 95-108). Charlotte, NC: Information Age Publishing.

Kendrick, J. R. (1996). Outcomes of service-learning in an introduction to sociology course. *Michigan Journal of Community Service Learning, 3*(Fall), 72–81.

Killian, J. (2004). Pedagogical experimentation: Combining traditional, distance, and service learning techniques. *Journal of Public Affairs Education, 10*(3), 209–224.

Lazar, J., & Preece, J. (1999). Implementing service learning in an online communities course. In *14th Annual Conference International Academy for Information Management* (pp. 22–27). Charlotte, NC. Retrieved from http://www.google.com/url?sa=t&rct=j&q=Implementing+service+learning+in+an+online+communities+course.+In+14th+Annual+Conference+&source=web&cd=1&ved=0CCsQFjAA&url=http-%3A%2F%2Fciteseerx.ist.psu.edu%2Fviewdoc%2Fdownload%3Fdoi%3D10.1.1.92.8916%26rep%3Drep1%26type%3Dpdf&ei=kWaVT8qIBIPM6QHVuvWmBA&usg=AFQjCNEjyqr1w13S5wFGQSRxJi9iCHDYkw&cad=rja

Lehman, R., & Conceição, S. (2010). *Creating a sense of presence in online teaching: How to "be there" for distance learners*. San Francisco, CA: John Wiley & Sons.

Mabry, J. B. (1998). Pedagogical variations in service-learning and student outcomes: How time, contact and reflection matter. *Michigan Journal of Community Service Learning, 5*(1), 32–47.

Malvey, D. M., Hamby, E. F., & Fottler, M. D. (2006). E-service learning: A pedagogic innovation for healthcare management education. *Journal of Health Administration Education, 33*(2), 181–198.

McGorry, S. (2006). Eservice learning: Lifetime and career skill development. In *American Marketing Association Conference Proceedings*. Chicago: Summer vol. 17, p. 111.

Mills, S. (2001). Electronic journaling: Using the web-based, group journal for service-learning reflection. *Michigan Journal of Community Service Learning, 8*(1), 27–35.

Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A framework for teacher knowledge. *Teachers College Record, 108*(6), 1017–1054.

Mosley, P. (2005). Redesigning web design. *Academic Exchange Quarterly.* Retrieved from http://csis.pace.edu/csis/data/comArchive/techReport216.pdf

Muirhead, B. (2004). Encouraging interaction in online courses. *International Journal of Instructional Technology and Distance Learning, 1*(6). Retrieved from http://www.itdl.org/journal/jun_04/article07.htm

Oravec, J. (2003). Blending by blogging: Weblogs in blended learning initiatives. *Journal of Educational Media, 28*(2–3), 225–233.

Perkins, D. F. (1994). Why community service and service learning? Providing rationale and research. *Democracy and Education, 9*(1), 11–15.

Rama D. V., S. Ravencroft, S. K. Wolcott, and E. Zlotkowski. (2000). Service-Learning Outcomes: Guidelines for Educators and Researchers. *Issues in Accounting Education. 15*(4), 656-689.

Seifer, S. D., & Mihalynuk, T. V. (2005). *The use of technology in higher education service-learning.* Retrieved from http://www.servicelearning.org/instant_info/fact_sheets/he_facts/use_of_tech/

Skinner, R., & Chapman, C. (1999). *Service-learning and community service in K-12 public schools.* Washington, DC: National Center for Education Statistics, U.S. Department of Education.

Stoecker, R., Hilgendorf, A., & Tryon, E. (2008). Incorporating technology in service-learning: A case study of appropriate use. In A. Dailey-Hebert, E. Donnelli-Sallee, & L. DiPadova-Stocks (Eds.), *Service-eLearning: Educating for citizenship*, (pp. 31-44). Charlotte, NC: Information Age Publishing.

Strage, A. (2004). Long-term academic benefits of service-learning: When and where do they manifest themselves? *College Student Journal, 38*(2), 257–261.

Strait, J., & Hamerlinck, J. (2010). *Service-learning in online courses webinar.* Retrieved February 9, 2010, from Center for Digital Civic Engagement website: http://cdce.wordpress.com/2010/02/10/service-learning-in-online-courses-webinar/

Strait, J., & Jones, J. (2009). *Each One Teach One program.* Retrieved May 20, 2010, from http://www.eric.ed.gov/ERICWebPortal/detail?accno=EJ853211

Strait, J., & Sauer, T. (2004). *Constructing experiential learning for online courses: The birth of e-service.* Retrieved May 20, 2010, from http://www.educause.edu/EDUCAUSE+Quarterly/EDUCAUSEQuarterlyMagazineVolum/ConstructingExperientialLearni/157274

Swan, K. (2002). Building learning communities in online courses: The importance of interaction. *Education, Communication and Information, 2*(1), 23–49.

Tabor, S. W. (2007). Narrowing the distance: Implementing a hybrid learning model for information security education. *Quarterly Review of Distance Education, 8*(1), 47–59.

Waldner, L., & Hunter, D. (2008). Client-based courses: Variations in service learning. *Journal of Public Affairs Education, 14*(2), 219–239.

Waldner, L., McGorry, S., & Widener, M. (2010). Extreme e-service learning (XE-SL): E-service learning in the 100% online course. *MERLOT Journal of Online Learning & Teaching, 6*(4), 839–851.

Waldner, L., Roberts, K., Widener, M., & Sullivan, B. (2011). Serving up justice: Fusing service learning and social equity in the public administration classroom. *Journal of Public Affairs Education, 17*(2), 209–232.

Wilhite, S., & Silver, P. (2005). Educating citizens vs. educating technicians: A false dichotomy for higher education. *National Civic Review, 94*(2), 46–54.

About the Authors

Leora S. Waldner is an associate professor of public administration, and the site program coordinator of the Master of Public Administration program at Troy University's Atlanta site. Her research focuses on e-service-learning and environmental planning. Waldner earned her bachelor's degree from University of California at San Diego, and her master's degree and Ph.D. from University of California at Berkeley.

Sue Y. McGorry is professor of business and chair of business administration and marketing at DeSales University. She has been teaching online for over 15 years. McGorry earned her bachelor's degree in economics finance and French from the University of Scranton, and a Ph.D. in marketing and applied social research at Lehigh University. She completed postdoctoral work at the Massachusetts Institute of Technology.

Murray C. Widener is an assistant professor of public administration at Troy University. His research interests include service-learning, online teaching challenges, and public safety performance measures. Widener earned his bachelor's and master's degrees from Columbus State University, and his doctorate from the University of Alabama.