

E-Engagement: Approaches to Using Digital Communications in Student-Community Engagement

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Abstract

Scholars have claimed that online communication technologies would upend university-community engagement. We explored faculty approaches to and perspectives on e-engagement at one university with a largely residential student body where classes were held in-person. We suggest that e-engagement affords different rather than better or worse opportunities for engaged learning. Because e-engagement often involves international partners, it raises issues of student competencies to work with diverse partners online, including intercultural understanding and digital literacy. This study preceded the 2020 COVID-19 pandemic, but the subsequent conversion of many courses to online format, and the possibility of similar crises spurring online-only learning in the future, add new urgency to understanding how communication technologies can facilitate community engagement. Universities can adapt and expand the myriad existing models of community engagement for online engagement. In short, e-engagement challenges us to navigate new forms of community and place, whether or not in response to crisis.

Keywords: e-service-learning, e-engagement, technologies, higher education



In 2013, university engagement scholar Dan Butin critiqued the “engagement ceiling” or paucity of new ideas and models for university-community engagement. He asked, “Can face-to-face engagement with local communities survive, much less have resonance, in an automated, machine-driven, web-based pedagogical environment?”

Perhaps, because suddenly, we have to figure out what community voice looks like in a networked and too-often anonymous learning environment. Perhaps, because we now have to rethink what community impact means and looks like when the “community” may be global and distributed. Perhaps, because we now have to recalibrate and rearticulate what social justice means. Perhaps, because notions of respect, relevance and reciprocity—foundational to the community

engagement field—have become unmoored from the locations we thought them to inhabit. (Butin, 2013).

Butin (2013) claimed that online engagement was bringing us to a “precipitous moment where traditional models and norms no longer apply so easily or thoroughly. In some cases, there are immense opportunities to be gained as faculty discover how to make their work public and bring the public into their work.” In short, Butin felt that online learning could upend—and spur innovation in—university-community engagement.

At the opposite extreme of Butin’s enthusiasm for an online engagement revolution is the skepticism faculty express about the value of online service-learning (cf. Arthur & Newton-Calvert, 2015). More specifically, faculty and administrators question whether an online experience can

provide the same meaningful partnership and reflection opportunities described for face-to-face service-learning, which may derive from “participation in community, especially in terms of fostering coalitions and creating responsive resources for and with that community” (Brown, 2001; emphasis in original).

As digital technologies, by choice or necessity, become embedded in university instruction, we wondered if faculty are developing multiple models for online community-engaged learning, including at universities with residential student bodies where instruction normally occurs in traditional rather than online classrooms. Thus, the goal of this article is to explore and reflect on models of online community-engaged learning and to understand how faculty and students are using digital technologies to afford new or different opportunities for students and community partners. To address this goal, we used semistructured interviews with 23 faculty at one land-grant university to answer the following questions: How are digital technologies being used by students and community partners participating in university engagement experiences? What do faculty view as the opportunities or affordances of using these technologies?

In presenting our findings, we build on Waldner et al.’s (2012) widely cited classification of e-service-learning to present more nuanced models of how technology is used in community engagement. Further, we attempt to draw out unique affordances offered by online community engagement. In so doing, we attempt to address the concerns of many faculty who, in contrast to Butin (2013) touting the “immense opportunities” to be gained through digital technologies, consider online education (Allen & Seaman, 2012), and especially online service-learning (cf. Arthur & Newton-Calvert, 2015), to be “second-class” relative to face-to-face classrooms and community engagement.

Literature Review

E-service-learning Definitions and Types

Waldner et al. (2012) defined e-service-learning (electronic service-learning) as “a service-learning course wherein the instruction and/or the service occurs online” (p.123). They proposed four models of e-

service-learning depending on whether the classroom or engagement occurs online, in person, or both. These authors posited three hybrid models—the university course occurs online but students interact with partners in-person, the course occurs face-to-face and students interact with partners online, and a mixture of online and face-to-face interactions among students and between students and community partners—plus a fourth “extreme” e-service-learning, where all interactions occur online. Often e-service-learning involves student-student and student-community partner teams, which also may meet virtually. E-service-learning tends to be course-based and encompasses different types of service experiences, including consulting, conducting research, or designing a website for a community partner (Rawlings & Downing, 2017). For example, in one course, Google Hangouts was used for lectures and discussions with NGO community partners, assignments were posted on Twitter and Instagram, and the final project was developing a social media campaign for the NGO partners (Messner et al., 2016).

Other terms for types of e-service-learning exist. “Collaborative online interactive learning” uses digital technology to link university classrooms in one or more countries, thus preparing students for multicultural work environments, and can include opportunities for service (de Castro et al., 2019). Similarly, “structured online intercultural learning” refers to sustained cross-cultural learning experiences using online communications technologies and is reported to help preservice teachers develop a global citizen identity (Ullom, 2017).

To be consistent with our university’s generously funded, multiyear engaged learning initiative, we introduce the term *e-engagement*, which has both structural dimensions (encompassing a broad range of forms of engagement, including community-based participatory research, translational research, citizen science, and extension, to name just a few) and ethical dimensions (emphasizing humility, commitment to addressing issues of public concern, and regarding community partners as vital collaborators and creators of knowledge). Our university Office of Engagement Initiatives describes community-engaged projects and programs as those that involve faculty, student and community partner collaboration and that both have a positive social

impact and support opportunities to conduct research, teach, and learn (Office of Engagement Initiatives, n.d.). We use the term *e-service-learning* first, to be consistent with the literature in our discussion of affordances and issues of place and community, but *e-engagement* later in describing our findings about how online technologies are used among faculty at our university.

E-service-learning Affordances and Outcomes

By expanding engagement opportunities beyond local and global off-campus experiences, e-service-learning addresses barriers imposed by the limited number of organizations able to host students seeking local opportunities, and by the time and financial costs entailed in traveling and living abroad (Crabill & Butin, 2014). In freeing service-learning from geographic constraints, e-service-learning provides access to more students and community partners. Because a growing number of online students are nontraditional—they may not have the flexibility in their schedules or resources to spend time away from work and family, or they may be students with disabilities that inhibit travel—e-service-learning expands not only the number but the type of students with access to community engagement experiences. Further, digital communications using social media and conferencing software can afford multicultural engagement opportunities for those who may have limited opportunity to travel (Crabill & Butin, 2014; Gasper-Hulvat, 2018; Harris, 2017; Rawlings & Downing, 2017; Waldner et al., 2012).

For community partners, e-service-learning can also act as an equalizing force by expanding opportunities to communities beyond those in which students can be present and minimizing community partners' time devoted to supervising students in the field, which can be an onerous commitment for resource-poor NGOs (Harris, 2017). Similarly, e-service-learning enables scaling up from a single to multiple universities and community projects; in an online service-learning course involving students from five universities, students conducted web design and other projects for nearly 100 local government partners over 3 years (Poindexter et al., 2009).

E-service-learning can also foster critical digital literacy and transliteracy skills related to evaluating and creating evolving

forms of digital media; it can also expand students' use of social media to include substantive professional interactions. In doing so, it can help students and community partners develop civic habits, an identity as global citizens, and a realization that service-learning is relevant in the digital age (Frau-Meigs, 2012; Harris, 2017; Hinck, 2014).

Despite concerns about the quality of interactions in online communications, McGorry (2012) found no significant differences in self-reported outcomes among students in face-to-face and online business marketing courses with similar service-learning assignments. Students in the online course communicated with other students and their community partner online. The outcome measures included practical skills (e.g., "applying knowledge to real world"), interpersonal skills (e.g., "ability to work well with others"), citizenship (e.g., "ability to make a difference in the community"), and personal responsibility (e.g., "ability to assume personal responsibility"). In another study focusing only on online students, those who interacted face-to-face with community partners self-reported more positive outcomes on only one measure (civic responsibility) relative to those who interacted with community partners online, whereas outcomes on five measures (critical thinking, communication, career and teamwork, global understanding, and academic development) were not significantly different between the two groups. The authors attributed the lower civic responsibility scores of students with online community partners to these students' not developing a sense of belonging to their community work, which may have been related to their not having had the opportunity to choose their partners (Schwehm et al., 2017). In a humanities course at an Ohio university, students worked with the Archives of American Art in Washington, D.C., to edit transcripts of archived oral histories and publish them on the web. Student self-reported outcomes included disciplinary understanding, transferable skill development, critical decision-making, and emotional knowledge. Although the Ohio students, many of whom were lower income working adults, did not engage with diverse partners, they did cross boundaries of race, class, and other social identities through editing oral histories of Holocaust survivors, New York artists, and southerners in the United States (Gasper-Hulvat, 2018).

Negotiating Place and Community

Whereas traditionally the instructor has identified community partners in service-learning, students in an online e-service-learning course often live far from their university and thus choose their community partners (Goertzen & Greenleaf, 2016; Rawlings & Downing, 2017). This e-service-learning therefore can allow students to work locally where they may share a sense of community (Hansen & Clayton, 2014) and sense of place with their community partners (Sandy & Franco, 2014).

Sense of community can be extended beyond the local to encompass virtual communities. Kliewer (2014) identified three conceptions of community in e-service-learning. First, “online space as community” shifts thinking from community defined by physical boundaries to community defined by interests, identities, and concerns (Hinck, 2014). Second is the online community itself as a liminal space between the multiple on- and offline communities that are inherent to e-service-learning; the nature of this space emerges from the partnership process. Finally, e-service-learning can be a vehicle to create sense of community among students and partners. As students and partners define this sense of community, they exhibit a form of democratic engagement that is lacking when the instructor is solely responsible for partnership building. This shared responsibility in turn creates an opportunity for students who are disengaged from top-down, managed models of service-learning to meaningfully engage, drawing on their digital skills (Kliewer, 2014).

One can imagine multiple ways of negotiating issues of place and community in online courses. Sandy and Franco (2014) described an online collaborative mapping activity, in which students prepared to work face-to-face in a physical community (the city of Milwaukee) by mapping its assets and weaknesses. Through creating an abstract representation of the physical world, students enhanced their own sense of belonging to the e-service-learning community while gaining an understanding of Milwaukee as a place.

Despite the ability of online technologies to open up new types of engagement opportunities for students and community partners, concerns prevail about whether e-service-learning can afford the in-depth

and even transformational experiences that have traditionally been part of place-based student community engagement. Further, as online technologies increasingly pervade nearly every aspect of our lives, understanding different approaches to incorporate such technologies into service-learning and community engagement experiences can be used to advance the field of service-learning. Thus, to gain a deeper understanding of e-engagement across a range of disciplines, we conducted semistructured interviews with 23 faculty who participate in our university’s engaged learning initiative.

Methods

We used qualitative methods (Creswell & Poth, 2018) consistent with our goal of exploring and reflecting on models of online service-learning and to understand how faculty and students are using digital technologies to afford opportunities for students and community partners. More specifically, we conducted semistructured interviews with 23 faculty to gain a deeper understanding of how they are using digital technologies, and what they view as the affordances of using these technologies, in engaged learning projects. The study was approved by the Cornell Institutional Review Board, and all interviewees gave their informed consent.

Participants

Starting with names recommended by the fourth author, who works at our university center for community-engaged learning, we used snowball sampling (Mertens, 2014) to identify faculty who are leading a wide array of e-engagement experiences at our university. We interviewed a total of 23 faculty members (12 females and 11 males) from different fields, including natural resources, plant science, horticulture, law, public administration, sociology, anthropology, ethnic studies, engineering, and business. We were leaders (first and second authors) or a student (third author) in the environmental education massive open online course (MOOC) teaching assistant (TA) project led by one of the faculty members interviewed.

Data Collection and Analysis

We developed a semistructured interview guide (Appendix A) that included questions

about how digital technologies are used in engaged learning projects and what the challenges and outcomes are for students and community partners. The second author conducted a total of 22 interviews with 23 faculty members in person and recorded the interviews using the software Audacity. Each interview lasted 30–50 minutes. One interview was with two faculty members who teach the same course together, and the rest of the interviews were with one faculty member. Immediately after the interview, the second author wrote memos to summarize key points of each engaged learning project. The interviews were automatically transcribed by iFlytek Hears, and the second and third authors corrected the transcriptions for accuracy.

The second and third authors coded all the transcripts using Dedoose software. First, the two authors used structural coding (Saldaña, 2013) to identify categories of codes based on interview questions, for example, role of technology, outcomes, preparation, and challenges. Then we used grounded theory (Charmaz, 2006) to identify emerging codes under each category, which we merged into themes. To enhance the reliability of the coding scheme, the two authors coded two interviews separately and discussed emerging codes and any disagreement. Then we split the remaining interviews to code individually and discussed emerging codes. Finally, we exported all the codes and excerpts to Google Spreadsheet, and reorganized and merged codes into themes. The first author then read all the coding entries and original transcripts and synthesized the coding results until patterns emerged as described below.

Limitations

Interviewing faculty members from only one university makes it difficult to generalize results across higher education institutions. Further, we conducted this study before the COVID pandemic and thus did not capture more recent e-engagement trends. In addition, the involvement of three authors in the MOOC TA project provided a disproportionate amount of insight from this project, which could cause bias. Finally, we interviewed only faculty members and thus did not capture students' and community partners' perspectives.

Findings

Because our university student body is largely residential and, prior to the COVID-19 crisis, the university did not generally offer for-credit online courses, we had only one faculty member involved in extreme e-service-learning, in which both the partners and students interact only online (Waldner et al., 2012). Thus, student e-engagement generally involved a face-to-face classroom experience with variation in the nature of the online interactions with community partners. Four categories emerged from our analysis:

1. Online interactions with community partners as preparation for an in-person experience.
2. Online interactions used in most of the project, with only a short in-person component.
3. Online-only interactions with community partners with no face-to-face component.
4. Limited to no student interactions with community partners (most interaction occurs between faculty member and community partner).

The first three categories, which we label as process-driven, were found in social sciences and other disciplines; they emphasized collaborative planning, cocreation of knowledge, and other elements of the interaction process. The last category, which we label product-driven, was found in engineering where students designed physical infrastructure for communities.

Within these models, projects varied in their use of digital communications and other digital tools. In some cases, students and community partners used digital communications to coconstruct a product of use to community members, whereas in others students built a computer model that was made available to partners. In Table 1 we describe our models of e-engagement and how technology was used in our university's e-engagement courses.

Models of E-engagement

Online Interactions With Community Partners as Preparation for an In-Person Experience

Online student–partner interactions to prepare for in-person experiences were used in

Table 1. E-engagement Models and Examples

Role of technology	Example classes and student role
Online interactions with community partners as preparation for an in-person experience	
Planning jointly to work on problem	<p><i>Conservation.</i> Student teams paired with Ecuadoran NGO to work on common problem. (Faculty A, B)</p> <p><i>Conservation.</i> Use Facebook group, file sharing, and conference calls with Indonesian university partner prior to creating narratives of host country indigenous community members. (Faculty C)</p> <p><i>Garden-based learning.</i> Plan and construct product with Belizean school that will benefit the school and visit the school during spring break. (Faculty D)</p> <p><i>Garden-based learning.</i> Plan and conduct workshop and acquire workshop facilitation skills in partnership with county Cooperative Extension educators. (Faculty D)</p>
Learning alongside university students in host country with whom they collaborated on host country project	<p><i>Agile innovation.</i> U.S. students build relationships with Colombian students with whom they jointly conduct an in-person project in Colombia. (Faculty E)</p> <p><i>International agriculture.</i> U.S. students build relationships with students at Mexican university with whom they jointly conduct in-person project in Mexico. (Faculty F)</p>
Plan project and learn about partner local issues prior to in-person experience at international meetings	<i>Climate.</i> Planned collaboratively online for research that students conducted and partners used to prepare for COP climate meetings; subset of students and partners attend COP meetings. (Faculty G)
Conduct interviews	<i>Food systems.</i> Conduct interviews during snowstorm normally conducted in-person to create narratives of partners. (Faculty H)
Online interactions used in most of project, with only a short in-person component	
Prepare for court hearings	<p><i>Law.</i> Use WhatsApp to send documents and prepare for court hearings for teenage farmworkers from farmworker families facing deportation. (Faculty I)</p> <p><i>Law.</i> Support anti-death penalty cases in Africa, communicate with in-country lawyers via WhatsApp and Signal. (Faculty J)</p>
Online-only interactions with no face-to-face component	
Plan and implement client-based project for capstone or other course	<p><i>Public administration.</i> Students consult for government and nonprofit organizations in U.S. and abroad using weekly 15-minute Zoom calls, Google Drive to share documents, and WhatsApp. (Faculty K)</p> <p><i>Public administration.</i> Communications with community-based organizations and NGOs leading to students creating professional reports in English to meet partners' needs. (Faculty L)</p> <p><i>Public administration.</i> Help government and NGO clients design disaster-readiness policies. (Faculty K)</p>
Legal/translation assistance with birth certificates	<i>Ethnic studies.</i> Provide support for New York State farmworkers to rectify birth certificates for their children, addressing surname, spelling, and date convention discrepancies between English and Spanish. (Faculty M)
Cocreate theater production	<i>Theater.</i> Collaborate with other institutions to produce online play by invitation with Caridad Svich's "NoPassport Theatre." (Faculty M)
Cocreate mental maps	<i>Systems thinking.</i> Use Plectica software to cocreate mental maps of problems that partners are addressing. (Faculty N)

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Table 1. E-engagement Models and Examples cont'd

Role of technology	Example classes and student role
Online-only interactions with no face-to-face component cont'd	
Online course teaching assistants (TAs)	<p><i>Nature drawing.</i> Give participants in online course feedback on scanned copies of drawings. (Faculty D)</p> <p><i>Engineering MOOC.</i> Help develop course, update software for engineering problems, and answer questions MOOC students pose on discussion board. (Faculty O)</p> <p><i>Environmental education MOOCs.</i> Facilitate their own discussion section on edX Edge platform, spur Facebook discussions. In China, TAs lead course sections, translate materials, and facilitate WeChat discussions. (Faculty P)</p>
Limited or no interactions with community partner	
Offer technical assistance	<p><i>Engineering.</i> Research and design water purification systems for Honduras using open source software. (Faculty Q)</p> <p><i>Engineering.</i> Create computer model to strategically place trees on highways near residential areas to mitigate pollution particles and improve human health. (Faculty R)</p> <p><i>Conservation.</i> Students create report addressing issue of importance to conservation professional partner. (Faculty A)</p>

multiple global projects that involved short trips (1–3 weeks) to the partner country. Faculty conducting these projects generally felt that the face-to-face experience was essential to meaningful engagement experiences, although in some cases the in-person experience was more of a tour and the service component started before and continued after the visit online.

A common pattern especially for international experiences was for students and community partners to jointly plan the engagement project and build trust online. For example, in a course focused on garden-based learning, students communicated with schools in Belize prior to and after a visit, as they collaboratively created a garden education book featuring local Maya and Garifuna peoples, or evaluated a local garden education program (Faculty D). In a course in which students helped low-income countries prepare for international Conference of the Parties (COP) climate meetings, students learned about local climate issues through online communications with partners and then produced reports that their partners could use at the meetings; some students also participated in the COP meetings, where they met their partners (Faculty G). In food systems and business innovation courses, students at our (U.S.) university worked with students at a university in the country where the service project would occur to plan a project, which they carried out jointly in the host country

during a university break (Faculty E, F). In another course, U.S. students depended on an Indonesian university partner, with whom they communicated by conference call, to communicate with rural community partners with limited internet access. This project involved sharing files to jointly create narratives or story maps of how people living in remote areas in Indonesia were addressing conservation issues, and posting them to the project website and YouTube channel (Faculty C). In a U.S.-based example, students used communication technologies to jointly plan and conduct a workshop in partnership with county Cooperative Extension educators (Faculty D).

A university leader in engaged learning reflected on how internet communications can prepare students for the in-person experience:

In the old days, if a group travelled, the students would arrive sort of clueless. And so then they're trying to navigate all the culture shock at the same time that they're trying to catch up on sleep and trying to know the agency. And so the fact that students can do substantial learning, including the beginnings of interpersonal and intercultural learning, technologically, my understanding is that that leads to better outcomes for community partners. (Faculty S)

She continued to reflect on how technology can enable productive input from the partner:

Academics tend to recognize fairly limited kinds of knowledge and wisdom, and so technology can help get other kinds into the classroom, which I think is good for everybody, especially if it gives partners more of an opportunity to say we have a problem, you know, because that's something that's just hard. (Faculty S)

Reflecting on how communications technologies can create a “closeness” to distant places where service-learning is to take place, a professor remarked:

It's great because you're sitting there and you're watching somebody and they're in a mountaintop village in the Andes, in some little place and you hear the birds go in the back. You know it's just different. It brings you out of yourself and into their space. (Faculty B)

Online Interactions Used in Most of the Project, Short In-Person Component

The majority of the engagement project was conducted through online communications when students in the law school helped low-income U.S. clients prepare for court hearings using WhatsApp. Most of the communications were conducted online so as not to disrupt law students' intense class schedule, but the students did meet initially in-person with their clients, who were teenage farmworkers facing deportation (Faculty I). Students in another law school class who were supporting anti-death penalty cases in Africa communicated with lawyers in Africa using WhatsApp and the more secure app Signal. They then visited the death penalty clients, their lawyers, and other support people in Tanzania for 10 days during an academic calendar break (Faculty J).

Online Interactions With Community Partners, No Face-to-Face Component

In courses on disaster and other topics offered by the university institute for public administration, students acted as consultants for government and nonprofit organizations; clients ranged from Native

American tribes to refugees, communities planning for wildfire in California, and a Nepalese women's group. Student teams would meet with their clients 15 minutes each week via Zoom; they also shared documents via Google Drive and other technologies that were accessible to clients (Faculty K). Another public administration course for master's students engaged student teams in working with clients globally, in this case preparing professional reports in English to meet partners' needs such as marketing, grant proposals, and strategic plans, which the clients used to make decisions and improve programs (Faculty L).

In the birth certificate rectification project in Latino studies, students engaged in a complex, ongoing project in collaboration with the university farmworkers outreach program. Students learned about the problem of inaccurate birth certificates issued to U.S.-born children of immigrants, and responded to requests from the immigrants to help them understand the process of how to correct the erroneous birth certificates so they could use these documents to obtain identity papers from their parents' home countries. Students communicated with partners via phone and online, and the results are being channeled into instructional videos to be distributed to farmworkers (Faculty M).

Students in classes in engineering and conservation served as teaching assistants for MOOCs. In the engineering course, students updated software for engineering problems and otherwise helped update course materials, as well as answered questions from MOOC students posted on the MOOC discussion board (Faculty O). The professor commented how the project helped the university student TAs acquire knowledge more effectively than they would in the classroom:

Moving from novice to expert thinking and problem solving by working. . . . they're going to the MOOC, they see how I think, how I have learned to think for decades. And then through the interactions with me, through the interaction with [MOOC] students, I think they're getting very skilled at the software and the problem solving. But also more importantly, because my whole idea is that the conventional way we teach in problem

solving relegates people to thinking like novices. (Faculty O)

In a separate MOOC TA project, during each semester university student TAs assisted with two to three MOOCs focused on environmental stewardship and education. The student TAs performed different tasks, including monitoring the MOOC discussion board and spurring meaningful discussions on the MOOC Facebook groups. In a few cases, students developed a product for MOOC participants, such as infographics about health and plastic straws using Comic Life software. In addition to the TAs based at our university, the environmental MOOCs had TAs from multiple universities in China who were trained online and then supported Chinese MOOC students by hosting WeChat discussions, translating course materials, and hosting meetings to discuss the course materials with local MOOC participants (Faculty P).

Limited or No Interactions With Community Partner

In an engineering project, students created computer models designed to help the city of Louisville, Kentucky, plant trees near highways to mitigate air pollution particles (Faculty R). Students in a separate engineering project designed water purification systems for Honduran low-income communities using open source software (Faculty Q). Twenty of 100 students in this class traveled to Honduras, where they communicated largely with one partner who served as a liaison to local communities; the students had limited direct contact with community member beneficiaries of their water purification systems designs. In both these projects, the professors largely chose and controlled communication with a local academic or NGO partner, who in turn worked with the local community partners. In these “product-based” projects, the students developed technologies to solve local problems, and there was less emphasis on joint planning and building trust. One of the engineering professors explained,

You see, I’m very skeptical of a group that spends most of their time overseas. Because, what value are you bringing? Just by sending random university students who have the privilege of being at Cornell overseas, like, why are you assuming that they can bring

something? So, my assumption is that being useful is actually very hard. And we have to work really, really hard in our labs here to contribute something that is useful. (Faculty Q)

Affordances of Communication Technologies in University Engagement

We found that at the time we conducted this research (prior to the COVID-19 pandemic), engaged learning leaders on campus commonly questioned the use of online communications as an alternative to in-person experiences; some may feel comfortable with online communication supplementing, but not supplanting, in-person experience, or perhaps when online communication extends the possibilities for engagement to communities not otherwise reached. One leading engaged learning scholar somewhat begrudgingly acknowledged the potential of online communications:

Because especially if and as is the case many times, the two people haven’t met before. That just makes for a much more superficial, in my judgment, interaction, than if they were able to have a face-to-face. But, you know, nothing is absolute. And sometimes the use of Zoom to do interviews has produced fabulously great interviews and results. So, in my view, the technology doesn’t guarantee that it’s not going to be deep. (Faculty H)

Faculty P, leading the environmental education MOOC TA project, in contrast, was enthusiastic about a totally online experience.

[In MOOCs] because you have so many people from so many different communities in places around the world, in one spot at one time on one Facebook page, on one discussion board, you just learn a lot about what people are doing and how people are approaching environmental education, whether environmental volunteers, some citizen science, whatever about climate change around the world. And you see, I think on the one hand that a lot of the challenges are kind of disturbingly similar from place to place. And on the other hand, that people have developed some

really unique ways of connecting with their local communities. I just like this, we just have this body of incredibly creative and inspired people as part of the courses. And so the fact that the TAs get to be a part of that from here at Cornell and be exposed to all of those different opinions and voices I think is really valuable and I know it's been valuable for me as an individual. (Faculty P)

Projects used texting, conferencing, and social media software, including WhatsApp, Zoom, Skype, and Facebook. In general, WhatsApp was most accessible in poorer countries because of its lower bandwidth requirements and ease of use on cell phones. Zoom and particularly Skype were less accessible to low-income partners with limited connectivity. In the environmental education MOOCs that used Zoom for weekly webinars, an assistant posted short segments of the webinar audio and screenshots of PowerPoint slides to WhatsApp in real time, thus enabling webinar participation by community partners in countries with limited bandwidth.

Next we briefly describe the affordances provided by online technologies in the e-engagement projects, including communication, intercultural understanding, collaborative research and data sharing, product cocreation, and preparation of legal arguments.

Communication

Faculty members noted that technology allows for a diversity of community partners and for communication between community partners and students. Through conference software such as Zoom, students can get to know their community partners before meeting them in person, and students and community partners can jointly plan the engaged learning projects that students will conduct.

As one faculty member noted in reference to a project where students used electronic communication to do prep work for an in-person experience abroad,

Usually [students and community partners] talk with WhatsApp or through Skype . . . sometimes emailing back and forth. . . . And

by the end of the semester, they have to have settled on a particular project, where the community partner has a need that their skills will help them to fill. So it could be crunching some data for them. It could be even something like doing some work of helping translate a grant application or giving them some support on that. . . . But it's really important that they already have the goals set out. And they've already spoken to the person that they're gonna be working with so that they can hit the ground and be doing something productive right away, because it's a very short window. (Faculty M)

Students, faculty, and community partners also shared resources, ideas, and progress updates using communication technologies. For example, students created short videos, PowerPoint presentations, and videoconferences to share their experience during the engagement process with their community partners and with potential service-learning students. This helped potential new students gain a sense of digital skills learned through the e-engagement process that differ from those learned in a standard classroom. In the environmental education MOOCs, Cornell students and MOOC participants shared experiences related to the course topics using closed Facebook groups. In another course, Cornell faculty mentored students conducting community-based agricultural research in India using online conferencing software. In several courses, adjunct professors, NGO staff, and other experts gave webinars to the students using Zoom.

Intercultural Understanding

Students were able to experience a different culture through listening to the stories and histories of their community partners and their countries. They applied the resulting cultural knowledge and competence in the engagement projects.

I think it really is an eye opening experience for the TAs to be part of this international [MOOC online community], even if they're not having deep, deep connections with individuals, I just think it's an eye opening experience to see how people all over the world are deal-

ing with similar problems related to climate change, . . . and still they're maintaining their courage and their hope. (Faculty P)

Conduct Collaborative Research and Share Data

Community partners often ask students to conduct research and share data and products. In a public administration capstone course, students conducted interviews, created surveys, and wrote reports to support their community partners' missions. Community partners included development banks; international NGOs; foundations; nonprofit organizations; school districts; private industry working with the public sector; and federal, state, and local governments.

So they do conduct research. They will develop surveys, they will interview, they do focus groups, they may be doing data analysis of large data sets depending on the project. . . . we help them actually conduct research and gathered data in the field using technology, so using cell phones. (Faculty L)

In a class that created water purification systems for developing countries, digital technology was used to share data.

POST is [water purification] plant operator smartphone tracker. So it's what allows the plant operators who actually run these . . . plants to enter data on their smartphone. And then the next time [they] are at an internet hotspot, they can upload the data to the cloud. And then we can look at the data. . . . That is a way for us to get feedback from what's happening in the field. (Faculty Q)

Cocreate Useful Products

Technology allowed students to deliver products such as books, blogs, films, videos, grant proposals, marketing materials, reports, and story maps to their community partners, which often continued to be used after the engagement process ended.

So for GACSA [Global Alliance for Climate-Smart Agriculture], it was helping organize two big

workshops. And there's workshop reports that came out of that. For Armenia it was working on two different projects in reviewing their website. For the Climate Smart Youth Alliance, it was developing a curriculum for them. So there are concrete projects but they're different for each group. (Faculty G)

In a systems thinking course, students and community partners used a visual mapping software that allows online collaboration (Plectica) to cocreate a common understanding of a local problem, including its components and solutions (Faculty N). The professor explained,

Whatever the problem that they're trying to solve is or the organizational design that they're trying to do, and [the collaborative mapping software] allows them to share those maps with the community folks. And oftentimes what that does is, it sort of literally gets everybody on the same map on the same page, huge effect on getting different people who maybe are different stakeholders that look at the system in a different way. Those stakeholders can have different perspectives on the system, which are all in the map. (Faculty N)

Finally, in a public administration course, students created professional reports.

So the students have to provide a professional quality report. So it's a written outcome or written deliverable that meets requirements of an MPA degree but also meets the requirements of professional agency in their field. So I want them to be able to write like a professional writing who's working in the United Nations. I want them to be able to write a professional report in English for an organization like the United Nations when they leave. I also want them to do a professional presentation. So they learn professional communications, new interactions with the client. But they also learn how to do formal presentations. They also learn how to sort of speak the language of the field. So for policy makers, and the organizations that

we work with. We need to provide very concise, very clear, very simply stated recommendations of what people expect. So they learn how to develop executive summaries, for example. I also want them to learn about how to operate in a team and how to manage project and how to work with international organizations online remotely. And so we do a lot of work on communication and leadership team management. (Faculty L)

Students also showcased the products they made for their community partners through reports, publications, and theses.

Prepare Legal Arguments

Law school students communicating with their community partners paid special attention to keeping those partners' sensitive information private.

I knew about [Signal] because a lot of our international partners use it. . . . It's our partners that I'm trying to protect because they're the ones who are exposed to the risk and we're going to leave, but they're going to stay. In some countries, the countries where we work, it's fine. Ok. But yeah, in some other countries, you know, both in Africa and obviously around the world, people have greater security concerns, and even meeting with a group of foreign law professors and students will raise suspicion. So you know, so it's really for their sake that we try to be very discreet. (Faculty J)

Other law faculty used legal database software to ensure no conflicts of interest would occur in a legal case before a case or trial occurs.

We use a program called Legal Server and Legal Server is our case management system. It's basically a database where if I think if you're the lawyer and you say, "Oh, I'm gonna represent Beth, I think I want to take her case." You go into the case management system and you put my name in to make sure that you don't have a conflict, that you're not already representing

Beth's husband in a divorce fight. You know, you have so we have conflict checking. So that's an important database for us and we're expanding that database and using it to track our community partners so that we can always find ways to refer cases. So that's, I would say that's the most exciting technology for us right now is Legal Server. (Faculty I)

Discussion

What is the evidence that online technologies have dramatically changed service-learning (Butin, 2013) or community engagement? Our findings at a university with a residential student body build on and are consistent with research that has focused on online students: Online technologies have expanded community engagement to new partners and to nontraditional students, and have created new affordances for university student community engagement (Arthur & Newton-Calvert, 2015; Guthrie & McCracken, 2010a; Helms et al., 2015; Purcell, 2017). Electronic technologies have expanded community-engaged learning approaches and access for students and partners; however, they do not seem to have turned service-learning on its head (Butin, 2013). In Table 2 we draw on our findings and the literature to discuss the affordances, including new types of projects, partners, and communities, enabled by e-engagement.

Online communications can enhance traditional 1–3-week, in-person, student group experiences at distant locations, as well as enable new types of projects and partners, such as legal support for migrant workers in New York State and death penalty clients in Africa, consulting for government and NGO partners regionally and globally, and TAing for global MOOCs. Shortly after the start of the COVID-19 pandemic in the United States in winter 2020, the ability of online communications to expand the types and responsiveness of community engagement was again demonstrated when a law professor (Faculty I) interviewed for this article put out a call via email: "If anyone is working on coronavirus preparation and your community partners have identified unmet legal research/support needs, please let me know." Earlier, if students had to travel for each meeting or interaction in

the law and other projects, it would have had repercussions for their course schedule and have required significant resources, thus limiting the number of students and community partners who could participate. Six weeks later, our university would have prohibited such travel to slow the spread of the coronavirus.

Because e-engagement can afford interactions across multiple cultures for both traditional and nontraditional students, it creates opportunities to address intercultural understanding, including among students who are not able to travel (Crabill & Butin, 2014; Jung & Gunawardena, 2014; Shah et al., 2018; Strait & Nordyke, 2015; Waldner et al., 2012; Zhang et al., 2020). Here, e-engagement can draw lessons from more traditional international service-learning, which seeks to increase students’ global awareness, cultural awareness, civic-mindedness, and civic skills (Crabtree, 2008). In a separate study of our MOOC TAs using the Global Engagement Survey (Hartman et al., 2015), TAs showed increases in efficacy, conscious or thoughtful consumption, and critical reflection (unpublished data). Given

that access to and use of digital technologies differs among socioeconomic groups, cultures, and countries, digital literacy might be added to future assessments of global engaged learning.

The ability of e-engagement to afford expanded partnerships depends on strategic use of communication technologies (Guthrie & McCracken, 2010a). Options include using asynchronous discussion forums and social media to facilitate online dialogue and student reflections on socioeconomic privilege as it relates to online access and opportunities to develop digital literacy. As an example of leveraging the affordances of the virtual environment, students in a global health service-learning course used Google Hangouts for lectures, posted assignments on Twitter and Instagram—thus using both text and visual communication—and developed a social media campaign for community partners (Messner et al., 2016).

Online communication technologies can also facilitate access to a global community of ideas, values, religious views, and solutions to local issues; instructors can use guided

Table 2. Affordances of E-engagement From This and Previous Studies

Affordance	Description
Access—students	Enables access to service-learning for nontraditional and other students who, for financial, family, disability, or scheduling reasons, are not able to travel to community partner sites
Access—Partners	Opens up opportunities to work with university to any community partner with cell phone or internet access regardless of where they are located globally
Community	Enables communities of inquiry in projects where multiple students and partners communicate on a single discussion board or social media platform
Place	Enables service-learning projects that encompass multiple places regionally or globally while allowing partners to conduct projects locally
Perspectives/solutions	Enables sharing of multiple perspectives, ideas, resources, and problem solutions, which can be adapted by other partners or students
Collaboration	Enables cocreation of products and research collaboration with multiple partners

questions to help students reflect on this diversity of perspectives and apply them, along with course disciplinary content, to cocreating local solutions to climate and other issues (Guthrie & McCracken, 2010b, 2014). Further, according to the online community of inquiry model, reflective learning is enhanced when attention is paid to teaching (e.g., journaling assignments), social (e.g., using prompts to spur online discussion), and cognitive (subject-related) elements of an online learning environment (Akyol et al., 2009; Garrison et al., 2000).

In this study, in courses where students communicated with community partners online prior to an in-person visit, online communications helped to establish a shared sense of community and trust, and aided students in learning about the places where they would be working (cf. Kliewer, 2014). In the one-on-one client-based law and public administration projects where online communications extended the geographic scale of community engagement to a nearby region or distant country, students communicated one-on-one with their immigrant, death row, or other client and thus may not have created such a multistudent/partner online community.

In contrast, our MOOC TA project expanded the geographic scale of e-engagement to a global community of inquiry (Garrison et al., 2000), consistent with Kliewer's (2014) community defined by interests, identities, and concerns rather than by physical boundaries (Hinck, 2014). Even large MOOCs can foster a sense of community through opportunities for MOOC participants and university TAs to interact in real time and ask questions (e.g., weekly webinars) and to introduce themselves on social media and through online conferences where MOOC participants present and receive feedback on final projects. A sense of belonging may be enhanced when e-engagement students are able to choose their own community partners (Schwehm et al., 2017).

Even though e-engagement can have a regional focus or cover the entire globe, in most instances projects retain a place-based focus because community partners are still working on issues local to where they live. However, the scope of places included may be unrelated to whether participants develop a sense of community. In client-based projects, communications are largely one-on-one, whereas in a global online fellowship program observed by the authors,

participants developed strong connections through a WhatsApp group and weekly webinars and used WhatsApp to share support and prayers for each other in real time as they experienced hurricanes, other climate disasters, and more recently the COVID-19 pandemic.

Conclusion

A widely held view is that e-engagement provides an inferior experience relative to in-person engaged learning. However, many service-learning components, including teamwork and reflection, have been successfully incorporated into e-engagement experiences (Rawlings & Downing, 2017). Further, comparisons of student outcomes in e-service-learning and traditional service-learning revealed little to no difference in student perceptions of outcomes (McGorry, 2012; Schwehm et al., 2017).

Descriptions of community engagement often emphasize transformational change, perhaps because the focus has been on the subset of experiences that are long-term and immersive, usually in an unfamiliar international setting, and thus create dissonance leading to transformational learning (Crabtree, 2008; Hartman & Kiely, 2014). However, these "ideal" types of service-learning are not accessible to a growing population of nontraditional students, exclude many community partners, and may not be possible in times of global crisis such as the COVID-19 pandemic.

Rather than arguing for the superiority of one form of service-learning over another, perhaps we should consider different types of experiences, each with their own affordances. For example, in the environmental education MOOCs mentioned by Faculty P, the TAs did not benefit from the transformational experiences that often accompany travel to a new place. However, they became immersed in a global online community through which they could learn about the environmental activities of individuals with similar interests from over 60 countries. Students talked about feeling inspired by environmental activists who face difficult conditions. One master's student, who had spent 2 years in Tanzania and not met other environmentalists, was thrilled to be part of a global community that shared her commitment to the environment. As Faculty P leading the TA project remarked, "I think that they feel inspired and I know

I personally feel inspired by looking at all the stuff that people do all over the world for the environment even when they don't have the same resources that we do." We acknowledge that students benefit from face-to-face interactions with more local community partners, but we also see that online technologies enable students to rapidly respond to partners such as immigrants who may need medical or legal counsel during a virus epidemic. In sum, rather than disrupt, e-service-learning can expand and enrich engaged learning opportunities for students and partners beyond those possible through traditional service-learning.

Given the COVID-19-induced move to online learning, and the potential of online learning to play a greater role in higher education even after the pandemic, research on

models for e-engagement is essential to the perpetuation of university–community engagement missions. Potential questions could address how sense of community and sense of place can be built among community partners and students in an online environment. Other questions revolve around how e-engagement can expand the time and geographic scales, as well as the diversity of partners, in university engagement projects. In addressing these and related topics, researchers should look for opportunities to conduct research that encompasses multiple projects and multiple institutions, as well as faculty, student, and community partner perspectives.



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Appendix A. Semistructured Interview Guide

Objective

To document models of e-engagement and understand how digital technologies are used by faculty, students, and community partners participating in university engagement experiences.

Interview Questions

1. Could you please briefly describe your involvement with engaged learning?
2. How, if at all, have students used online technologies in your engaged learning work?
3. What are some of the challenges students experience in using online technologies for engaging with public audiences?
4. What are some of the benefits students experience in using online technologies for engaging with public audiences?
5. What outcomes of your project for students, community partners, and faculty/staff might you attribute to the use of online technologies?
6. If you have been involved in face-to-face engaged learning, what are salient differences between the two experiences for students, community partners, and faculty/staff?
7. What else would you like to share about your e-engaged learning experience?
8. Do you have suggestions for other thought leaders or individuals experienced in this area that we should interview?