The Impact of an Online Service-Learning Framework on Students' Understanding of the Complexity of Community Food Security and Development of Professional Skills

Hailey T. Bramley
North Carolina State University

Lauren D. Nolley
North Carolina State University

L. Suzanne Goodell
North Carolina State University

Natalie K. Cooke
North Carolina State University

ABSTRACT

The purpose of this study was to evaluate student learnings from an online community food security service-learning course in which students self-selected a community partner for an in-person service experience. Four major themes emerged from the data: (1) "food insecurity doesn't have a single face," (2) understanding of the complexities and nuances of food insecurity, (3) use of emotion to describe and discuss the service component of the service-learning experience, and (4) expression of appreciation and respect for organizations working to address food insecurity. The findings of this study support a scalable framework for online service-learning courses where students self-select their community partners.

Service-learning is an educational pedagogy that integrates course material, related service in the community, and guided critical reflection about the experience (Ash et al., 2009; Eyler et al., 1996; Eyler & Giles, 1999). This pedagogy is known to increase students' self-efficacy (Cooke et al., 2015; Overton, 2015; Sanders et al., 2016) and develop strong "campus-community ties" (Aftandilian & Dart, 2013). Self-efficacy is one's confidence in their ability to execute a task or skill (Bandura, 1977) and is an important aspect of skill development. Service-learning has the potential to benefit the student, community partner, and individuals the community partner serves (Lear & Abbott, 2009), and mutually beneficial partnerships are an essential component of service-learning courses (Bringle & Hatcher, 1996; Furco, 2000; Tinkler et al., 2014). Service-learning courses can be delivered in a traditional face-to-face setting, online, or with a hybrid approach where some content is delivered online and some face-to-face.

Within the last 10 years, service-learning has transitioned into the online learning environment (McGorry, 2012), and with this transition arose a new classification of service-learning referred to as "eService-learning" (Malvey et al., 2006). The term "eService-learning" encompasses any service-learning experience that contains an online component (Waldner et al., 2012). eService-learning can increase student confidence and self-efficacy (Early & Lasker, 2018;

Gasper-Hulvat, 2018; Schwehm et al., 2017); build a stronger understanding of their discipline (Becnel & Moeller, 2017); foster professional skills (also known as "soft" or "transferrable" skills), including empathy (Faulconer, 2020; Gasper-Hulvat, 2018), critical thinking (Faulconer, 2020), and listening skills (Gasper-Hulvat, 2018; Sun & Yang, 2015); and enhance student civic responsibility and social consciousness (Bourelle, 2014; Early & Lasker, 2018; Marcus et al., 2019; Schwehm et al., 2017).

Service-Learning Spectrum

The delivery method of the service-learning experience can be described as a spectrum, with one end of the spectrum having both academic instruction and service fully in-person and the other end of the spectrum having both academic instruction and service fully online (Waldner et al., 2010). Between the two extremes of the spectrum are variants with some degree of online service and/or academic instruction (Waldner, et al., 2010). Types of eService-learning include Type I (online learning with in-person service); Type II (in-person learning with online service); Type III (a portion of the learning online and in-person and a portion of the service online and in-person, which some term "blended"); and Type IV (with fully online service and learning) (Faulconer, 2020; Waldner et al., 2012).

Community Partner Identification

How community partners are identified for the service component of a service-learning course varies, depending on the course. In some courses, the instructor identifies one community partner with which all students will engage (Bourelle, 2014). In others, several community partners are identified by the instructor, and the instructor and/or student determines with which community partner the student will work (Nielsen, 2016). Student-initiated community partnerships, where students identify a community partner and initiate communications with that partner, can help students develop problem solving skills and the ability to adapt to challenges and changes during the experience (Nielsen, 2016).

In addition to skill-specific benefits, allowing students to select their community partner relieves course instructors of the responsibility of identifying a community partner (Nielsen, 2016). Additionally, requiring students to identify a community partner for the service component of the service-learning course allows the student to identify a more accessible (Nielsen, 2016; Roman, 2015) and/or more relatable community partner, resulting in a more meaningful service-learning experience (Nielsen, 2016). Student community partner selection can also allow students to explore a specific interest further by selecting a community partner whose work aligns with this interest (Nielsen, 2016). Further, this allows for students to select a community partner whose service requirement fits within their schedule (Roman, 2015). Ultimately, it also allows the university to "expand its reach" to the communities in which the online students live (Helms et al., 2015).

Despite these benefits, there are potential barriers and limitations to community partner self-selection. Student selection may result in a community partner agreeing to a service partnership they are unprepared to fill, resulting in lack of communication and information dissemination for the student to successfully complete their work (Nielsen, 2016). Student self-selection of community partners may also result in unequal service

experiences for students due to differences in responsibilities assigned by the community partner (Helms et al., 2015; Roman, 2015).

Critical Reflection

Critical reflection is the key component that connects the academic material to service in a service-learning course (Ash & Clayton, 2004; Ash et al., 2009; Eyler et al., 1996). Critical reflection encourages students to consider what they have learned through their service experience and how it applies to their classroom learnings (Ash et al., 2009; Karasik, 2013). Critical reflection allows for deeper exploration of the experience and associated learnings when compared to a standard reflection process (Ash & Clayton, 2004) and allows students to evaluate their prior beliefs and preconceived notions (Toronyi, 2020). Forms of reflection previously implemented in service-learning courses include journaling, in-class reflection activities or discussions, student presentations, online discussion forums, projects, and reflection papers (Brand et al., 2019; Dinour et al., 2018; Karasik, 2013; Mitchell et al., 2015; Sanders et al., 2016; Schneider-Cline, 2018; Tinkler et al., 2019). These reflections can occur at the end of the experience or throughout the experience (Faulconer, 2020).

Reflection papers are intended for students to critically reflect as they articulate what they have learned through their experiences (Dinour et al., 2018). Prior work indicates that critical reflection papers can deepen student learnings (Ash et al., 2005) and increase critical thinking (Allison, 2008) in a service-learning course. In the past, reflection papers have been used to measure changes in self-efficacy due to a service-learning experience, with results indicating that service-learning increases self-efficacy (Goodell et al., 2016a; Sanders et al., 2016; Schneider-Cline, 2018). Prior analysis of student reflection papers from service-learning courses and community engagement activities indicated students' ability to connect with course themes (Trudeau & Kruse, 2014), change their assumptions, apply skills in the community, and improve their understanding of the community students served (Dinour et al., 2018; Sanders et al., 2016).

Critical reflection papers are a way for students to articulate and document specific learnings (Ash & Clayton, 2004). When appropriately guided using specific, measurable learning objectives, critical reflection papers can offer an authentic depiction of student learnings (Ash & Clayton, 2004). As a result, critical reflection papers may be an effective mode by which to assess student learnings from an online service-learning course.

Community Food Security

Community food security can be defined as "a situation in which all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community self-reliance and social justice" (Hamm & Bellows, 2003). Food insecurity impacts aspects of individual well-being, including health, confidence, productivity, and ability to care for others (Maroto et al., 2015). Households with the highest rates of food insecurity include "households with incomes below 185 percent of the poverty threshold," "households with children headed by a single woman," "households with Black, non-Hispanic heads of household," and children where the head of house is not single (Coleman-Jensen et al., 2019).

In the past, service-learning has been integrated into courses that aim to educate students on and address food insecurity (Aftandilian & Dart, 2013; Currey et al., 2018; Grossman et al., 2012). Students who complete such a course have a greater understanding of community food security (Aftandilian & Dart, 2013; Currey et al., 2018; Grossman et al., 2012) and can see how course topics, such as food injustice (Aftandilian & Dart, 2013), characteristics of food insecure households (Aftandilian & Dart, 2013; Currey et al., 2018), and the impact of food insecurity (Aftandilian & Dart, 2013; Currey et al., 2018) manifest in the community. Students have been able to help address community food security through the service component of service-learning courses (Aftandilian & Dart, 2013; Grossman et al., 2012; Porter et al., 2008). Service activities include helping community members apply for food stamps, community garden development and maintenance, and providing garden education at community gardens (Aftandilian & Dart, 2013; Grossman et al., 2012; Porter et al., 2008). Ultimately, service-learning courses strengthen the mutually beneficial relationship between the university and the surrounding community (Aftandilian & Dart, 2013). Service-learning experiences have also been shown to shift student beliefs, when structured appropriately, and allow students to recognize themselves as "change agents" (Toronyi, 2020).

Despite these findings, there are still limited service-learning studies related to the effect of student self-selection of a community partner on student learnings and course experience. There is also a lack of work focused on self-selection of a community partner in, specifically, online service-learning courses and how that selection impacts student outcomes. Further, to our knowledge, student learnings from an interdisciplinary service-learning course focused on community food security have not been evaluated. The goal of this study is to explore student learnings from an online community food security service-learning course through thematic analysis of critical reflection papers.

Methods

Course Design

Introduction to Community Food Security is a Type I eService-learning course taught during a five-week summer session. Students complete all academic course work online, including units on the basics of community food security, multidisciplinary approaches to community food security programming, and case studies of successful local, state, and national community food security organizations. Students explore food insecurity through the lens of the social ecological framework. Some course learning objectives include (1) describe the history of food inequalities in the United States from a racial and social class perspective and the role of food justice in empowering these historically disadvantaged groups, (2) explain the complexities of community food security using the social ecological model as a framework to understand the interconnection of causes of food insecurity understanding the role of race and socioeconomic status on food security, and (3) discuss the limitations of and challenges faced when implementing community food security programs using one discipline's approach when compared to another discipline's approach. To receive the service-learning designation from the authors' university, the course must have service-

learning-specific learning objectives and meet a minimum number of service-learning hours per credit hour. The learning objectives for this course that align with the service-learning experience include (1) discuss the strengths and limitations of a community partner's current approaches to achieving community food security and ending individual food insecurity, (2) identify and describe current limitations to achieving food security efforts within the given community, and (3) describe how academic learning about community food security gained through the course was either reinforced or challenged as a result of the service-learning experience.

Throughout the summer session, students complete 15 hours of service at a community food security-oriented organization. Students self-select the community partner with whom they complete the service component of the course. The course instructor provides the students with a list of requirements for community partners and tips for identifying potential community partners. Because students are taking the course online, community partners are not limited to the community surrounding the university, but rather, are in the communities in which the students reside during the summer term. Students complete a series of assignments related to the service-learning experience, including (1) an assignment where they identify and rank their preference for three potential community partners in their community, (2) a survey agreement with the one community partner agency where they will complete 15 hours of service, (3) a report summarizing an interview with a staff member at the community partner agency, (4) small group discussion board posts where students compare and contrast community partner characteristics based on interview reports, (5) a proposal for ways that the community partner agency might adapt their programming, (6) small group discussion board posts where students provide feedback on the feasibility of their peers' proposals, (7) a final, adapted proposal incorporating peer feedback, (8) a survey verifying the completion of the 15 service-learning hours, and (9) a critical reflection paper summarizing their learnings from the entire experience. Interview and proposal assignments are common "deliverables," and group discussion boards and post-experience reflection papers are common forms of reflection within eService-Learning courses (Faulconer, 2020).

Study Design

Students enrolled in the online service-learning course wrote critical reflection papers as part of normal educational practices after completing the service-learning experience. Researchers analyzed 60 critical reflection papers, written by students enrolled in the course during the summers of 2017, 2018, and 2019. This research was approved by the Institutional Review Board at the authors' university.

Before engaging in thematic data analysis, researchers completed a five-phase coder training for data analysis, including completion of ethics training, review of relevant research methodology, discussion of codebook and its use, group coding of a subset of the data, and individual coding of the data set followed by discussion to reach consensus (Goodell et al., 2016b). Researchers engaged in a bracketing activity to document and discuss beliefs and assumptions related to community food security and service-learning (Beech, 1999; Creswell & Miller, 2000). This bracketing exercise helped to ensure that the findings of the study are representative of the data and not the researchers' preconceived beliefs or assumptions.

The research team chose a thematic analysis approach to qualitative analysis because this methodology allows for evaluation of data in a flexible manner to gain new knowledge (Braun & Clarke, 2006). The research team consisted of two graduate students and two faculty members. The two graduate student members of the research team completed open coding to determine emerging concepts and inform the development of the codebook. The same team members then independently coded the critical reflection papers using the codebook, meeting weekly to come to consensus on codes. Throughout data analysis, the research team met weekly to discuss coding discrepancies and determine preliminary dominant emergent themes. After the researchers coded all critical reflection papers, two members of the team reviewed quotes by coding category; then the entire research team determined the final dominant emergent themes.

Results

Thematic analysis of student critical reflection papers resulted in four dominant emergent themes: (1) "food insecurity doesn't have a single face," (2) understanding of the complexities and nuances of food insecurity, (3) use of emotion to describe and discuss the service component of the service-learning experience, and (4) expression of appreciation and respect for organizations working to address food insecurity.

Theme #1: "Food insecurity doesn't have a single face"

Students were able to identify that food insecurity can affect anyone. Contrary to their prior assumptions, they concluded that there is no prescribed description or external appearance to visually indicate that an individual is food insecure. As a result, students identified that there is no single face of food insecurity. For example, one student described an experience with a fellow volunteer:

> *I talked to one individual who was volunteering with me who told me about how he used to be food insecure. ... [H]earing this story really helped me see that a lot of these people are on their way to make their life better slowly, but food insecurity makes it difficult to focus on the other things in your life that can help you. The story and the experience really solidified the idea that food insecurity has no face[--] it can be anyone [--] and that nobody at all deserves to not know where their next meal comes from.*

Another student shared:

> *Relating back to those I would see walking in and using [the organization]'s services, I was a little surprised by some of the people walking in; case in point[,] the first time I walked in to [the organization] for the interview segment of this project[,] I started talking to a woman who was dressed in business casual with an [redact] ID around her neck who turned out to have not had any part of [the organization] and was truly just there to get what she needed to get.*

This student's surprise at the appearance of the individual receiving aid is consistent with comments made by other students. Another student commented on the appearance of those receiving food aid by writing,

> ...I had a picture in my head of what kind of individuals I would see at the pantry[,] and I did see plenty of people that fit that description[,] but I also saw several families that did not look like your typical family who is considered food insecure. This volunteer experience opened my eyes to the fact that at any given time it could be me and my family that has to walk through the front doors of [the organization] and take a number.

Many students assumed they would be able to determine whether someone was food secure based on their external appearance. The following student noted the disparity in anticipated versus actual external appearance by noting:

> As awful as it sounds, I assumed that I would be able to distinguish who was food insecure and who was not by their appearance. We often associate the poor and homeless to look dirty, have torn or ripped clothes, and have bad hygiene. I thought that when people arrived at [the organization] I would be able to distinguish who was coming to receive assistance and who was coming to shop, but I was quickly proven wrong. Almost everyone [who] came to the daily food basket program was nicely dressed and groomed. Their clothes were clean and so was their hair, face, and outer body. There were many people wearing designer clothes and sneakers but were still in need of food assistance.

Another student described a similar experience:

> ...I saw several people that I knew very well and would have never thought were having trouble with food security were some of the clients at [the organization]. I happened to know one of the families very well and I had no idea that they did not have enough food for their family. [It] was an eye-opening experience for me because the clients of a food pantry come in all shapes and sizes. The typical person you would think of as needing to go to a food pantry was definitely there as a client but there were also families that I knew that had jobs and worked very hard and still visited the food pantry because their jobs were not paying enough to make ends meet for their family.

Another student described how their community partner helped them understand that "food insecurity doesn't have a single face." This student reflected:

> The volunteer coordinator for [the organization], [name], informed on how diverse of a people group they serve based on both race, socioeconomic standing, and culture. She alluded to something we discussed throughout the course, hunger does not have a look and it's not an exclusive club for a certain type of person.

A small but notable group of students expressed further understanding by describing how individuals with a fixed income or low-income job struggle to pay bills and purchase food. As one student noted,

> *The people may have jobs who pay minimum wage or higher[;] however[,] their paychecks go towards rent, electric bills, phones, etc. After these expenses are paid off, they may not have enough left to be able to feed themselves or their families.*

Similarly, a student shared:

> *After meeting some of the individuals who were receiving food from the food pantry, I realized that many of them were normal working people having a hard time paying for food on top of the normal everyday household and living expenses.*

Another student explained:

> *What I didn't realize that this course and volunteering showed me was that people become food insecure all of the time, and that [it] occurs in so many different ways. At the food bank the director was giving some examples of this, like how for instance if someone had just lost their job and hadn't been able to save up for an emergency, or how there is a huge portion of seniors who are food insecure and are incredibly resistant to ask for help.*

Through the online academic material, students learned about the groups experiencing the highest rates of food insecurity, and as indicated by their critical reflection papers, they were clearly able to understand that food insecurity can affect all people regardless of race, age, perceived level of wealth, or employment status. As a result of this understanding, students concluded that "*you really can't judge people based on their exterior appearance.*"

Students were able to recognize that certain groups are more affected by food insecurity than others, connecting this finding back to their academic learning. These learnings align with the course objectives. As one student mentioned:

> *My service experience genuinely reinforced a few of the concepts I learned in this class when it comes to the individuals who are affected by food insecurity. When visiting local pantries on deliveries[,] I quickly saw the disproportionate amount of African American and Latino families who sometimes needed help from their local pantry.*

This understanding was further depicted by their use of statistics provided by the organization or concluded from their observation to highlight the prevalence of food insecurity experienced by certain groups. When describing their experience, one student referenced these statistics:

According to my observation, there were approximately 60 percent of people who get the food are Latinos, 30 percent of people are African American, and 10 percent of people are Caucasians. This distribution ratio is very similar to what we learned from the relationship between community food security and race.

Through student descriptions and statistics, students identified African Americans, Latinos, individuals of low socioeconomic status, and elderly individuals as being more vulnerable to food insecurity. Reflecting on their experience, one student noted:

100% of the people who were volunteering for their meal were black. 100% of the people who were volunteering and not receiving a meal were white. While these statistics aren't representative of all of [large city in state], it does strongly reinforce that blacks struggle with food insecurity more than whites.

These findings are consistent with the course objectives, indicating that student experiences aligned with their academic learnings.

Theme #2: Understanding of the complexities and nuances of food insecurity

In addition to understanding and articulating the individuals affected by food insecurity, students were also able to express understanding of the complexity of food insecurity. Through their reflections, students demonstrated that they are able to understand the complex nature of food insecurity, expressing an understanding of the dichotomous nature of food insecurity and that food insecurity can be both dynamic and perpetual. Students demonstrated understanding that lack of transportation, healthcare expenses, and lack of access to healthy foods are barriers to food security. One student reflected on lack of transportation: *"There still exists a need to distribute services for clients who are unable to reach the facility. Establishing a volunteer base willing to deliver groceries to client[s'] homes could impact more members living in food deserts."* Another student described the impact of healthcare expenses on food insecurity by writing:

Stereotypical food insecurity could be due to a loss of a job or falling below the poverty line, but I never thought of food insecurity as regarding those who are falling short of funds due to an unexpected medical emergency or other-like emergency. The folks that take advantage of this food pantry most likely do not fit the stereotypical mold of food insecurity.

Further, when prompted to discuss the role of socioeconomic status and race on food insecurity, students recognized the systemic underpinnings and their consequences, which perpetuate food insecurity. Students identified historical oppression, structural racism, and stratification of social classes as root causes. As one student stated,

> *African American and Hispanic individuals are more likely to live in poverty than Caucasian Americans, thus contributing to lower socioeconomic class statuses of African American and Hispanic households. Lower social class status pairs with food insecurity as nutrition needs are unable to be met under conditions of poverty.*

A small but strong contingency of students articulated food deserts, lack of education, Jim Crow laws, and community-wide food insecurity as byproducts of the root causes of food insecurities. One student noted: "*In the United States, African Americans are more than twice as likely to face hunger than are Caucasians—not everyone has been given equal opportunity to access food due to discriminatory Jim Crow laws, slavery, and even housing location placement.*" Students appeared to apply their understanding of the complexity of food insecurity to the service-learning experience, viewing food insecurity through the lens of the social ecological model.

While students understood that there is not a singular solution for food insecurity, they did not articulate solutions to systemic causes of food insecurity that would address it in a long-term and sustainable manner.

Theme #3: Use of emotion to describe and discuss the service component of the service-learning experience

Through their critical reflection papers, students expressed different emotions that they felt throughout the service component of the service-learning experience. Students expressed an immense amount of surprise and shock. Many students expressed surprise and shock at the state and magnitude of food insecurity in the community they served. The following quote illustrates a student's surprise and shock:

> *Since this was my first experience working at the [clothes pantry,] I did not know what to expect as far as the amount of people that would show up. I was shocked at how many people were there when the doors opened to get some items they needed.*

Another student reflected similarly:

> *I grew up around a more rural type of poverty, so it was hard for me to wrap my head around the extent and magnification of Urban poverty in this area. The sheer size of [the organization] was shocking to me because up until then, all I knew about food security was the statistics[,] and I had not given much thought to what it truly takes to reach people in need.*

Students also expressed frustration and sadness regarding the extent of food insecurity in the community and that they were unable to provide a more immediate form of long-term relief. Through their reflection, one student commented:

> *...when I helped the truck driver deliver food to the different places, there were a lot of people waiting for the food. This made me feel frustrated because there are*

many things that are wrong in our society, and these people often work really hard to have a better life but cannot seem to escape the cycle of poverty.

Similarly, another student reflected:

When visiting local pantries on deliveries[,] I quickly saw the disproportionate amount of African American and Latino families who sometimes needed help from their local pantry. While this was something I expected and something [the volunteer coordinator] and I discussed in our interview, it was startling nonetheless[,] especially when you see that they are all working very hard to put food on the table.

A small but marked group of students expressed surprise at the impact they were able to make in providing food insecurity aid during their service-learning experience. For example, one student reflected on their impact:

...another expectation I had was that in a 2 or 3 hour session, we would not be able to actually make a difference or contribute a significant amount to the community. However, I was pleasantly surprised when I found that at the end of [our] session we had [processed] thousands of pounds of food goods!

The majority of students expressed positive emotions related to the service component of their service-learning experience. One student shared:

I also interacted with many other individual volunteers who all had varying reasons as to why they were spending their time at [the organization]. It was enjoyable to work with so many different people and engage in thoughtful conversations often about life and food security.

A subset of students described their experience as humbling. For example:

It was very humbling to see all types of individuals volunteering at the Food [B]ank through the course of my 15 hours and to reaffirm that every little bit of time you put in through volunteering makes such a huge difference.

A small group of students described that at the beginning of the service-learning experience they had negative emotions such as nervousness or disappointment in anticipation of working with a certain population or community partner. One student mentioned that they were "...*not overly excited to be placed with seniors for the Cooking Matters course that I was assigned to*" at the start of the service-learning experience. This indicates that while students were able to pick their community partner, they were not always able to pick the activities they would engage in with that community partner. Despite their initial expression of negative emotions in anticipation of the service component of the course, all of these students expressed positive emotions when reflecting on their experience, indicating that their emotions changed over the course of the experience. One student reflected:

Never in my life have I seen myself enjoying farm work. … Driving up for the first time I was nervous and apprehensive, but it didn't take long for me to fall in love with the work I got to do there.

Theme #4: Expression of appreciation and respect for organizations working to address food insecurity

In addition to describing the service-learning experience with positive emotions, students also expressed appreciation and respect for their community partners. One student articulated a sentiment shared by many of the students, writing: "*After my service experience, I have to admit that I have gained a newfound respect for organizations that are attempting to promote community food security. It is a tough process with a great number of barriers.*" Similarly, another student reflected:

> *After witnessing these collaborations, I gained a new respect for the scale of the community food security efforts. There is more work that goes into these efforts than I originally thought. The amount of planning and research that has to be done to effectively tackle the problem is incredible.*

While this appreciation and respect was a general sentiment, students also specified which organizational components they admired most. Many students conveyed appreciation and respect for the values or mission of the organization. For example: "*...I liked that [the organization] had this sort of no religious strings attached feeling. [The organization], by having no religious affiliation, seemed more welcoming towards all food insecure individuals, rather than focusing on a religious context to help the hungry.*"

A small number of students also expressed appreciation and respect for specific actions taken by the organization as a part of their food insecurity efforts. One student described the efforts of the organization they served:

> *...It really demonstrated how important it was to the organization to do more than just provide food to the community. It brought the meaning to a deeper level because they put themselves in their shoes to understand the culture of the area and start growing foods that the community enjoyed eating. They even took it a step further to teach basic recipes to the community, which blew me away because they took the time to gather the exact ingredients for the recipes and made take home cards on how to prepare the meal. By seeing this[,] it made me appreciate the work they were doing here so much more and reaching beyond just feeding the community, but teaching the families valuable skills that they can pass down to their children.*

Several students articulated respect for the scale and tasks required to allow the organization to function. One student reflected that they "*[had been] able to experience many examples of what it is [like] to actually work to make an effort in changing our community's food insecurity. [The organization] was so incredibly welcoming and encouraging to all of their volunteers.*" Students often used the term "eye-opening" when

elaborating on their observations of the service organization's operations, such as: "*The service-learning experience I participated in this course was so unique and honestly, such an eye-opening and positive learning experience.*"

Additionally, students expressed appreciation and respect for the workers and volunteers at the organizations they served. One student reflected:

> *Without [the kitchen manager], the meals would never be cooked and prepared for the food insecure families. [The farm manager] and [the kitchen manager] work side-by-side, coordinating daily, to link arms and pursue their common goal. I really enjoyed watching two very different people, with different backgrounds, experiences, and disciplines, work together so well and in unity.*

While expressing this appreciation and respect, students commented on the passion, character, and efforts of specific individuals with whom they interacted. One student reflected on her encounter with individuals from the organization by writing,

> *The staff are all passionate about what they do[,] and they are so inspiring to listen to when they talk about what they do. I'd also add that the Board of [D]irectors is a solid and active team[;] they not only have their regular jobs, but make it a point to volunteer and be patrons of [the organization] as well. The volunteers are incredible as well[;] they come from all walks of life and various parts of the United States.*

Discussion

The findings of this study indicate that (1) a Type I eService-learning course using student community partner self-selection can help students see the complexity of course content in a community-based setting and (2) this framework can be effective and scalable for instructors seeking to build students' professional and transferrable skills and civic-mindedness.

Prior research shows in-person service-learning courses allow students to understand food insecurity and connect course objectives to the service component of the course (Aftandilian & Dart, 2013; Currey et al., 2018; Grossman et al., 2012). The present study demonstrated that delivering a course on community food security using this online service-learning model allows students to understand the complex nature of food insecurity. This course is an interdisciplinary course open to students of all majors; the findings of this study revealed that by using an online service-learning framework, students from various disciplines are able to understand the complexity of community food security. Findings indicated that students are able to articulate root causes of food insecurity, systemic underpinnings of food insecurity, manifestations of those systemic underpinnings, and further, that food insecurity can affect anyone, hence demonstrating understanding of course learning objectives. This study also demonstrated that online service-learning courses in which students self-select their community partners can be a positive experience for students. This is consistent with prior work indicating that allowing students to select the community partner for the service component of the service-learning course allows the student to select a partner with values, goals, and/or

objectives that align with the students' (Nielsen, 2016). The result of student community partner selection is a more meaningful experience (Nielsen, 2016).

Additionally, our findings are consistent with prior research indicating that the use of a service-learning model allows students to meet the intended course objectives (Bettencourt, 2015). When prompted to reflect on course learning objectives, students were able to articulate the role of race and social class on food security and articulate barriers to achieving food security. Further, students were able to describe how these course objectives manifested in their service-learning experience. As evidenced by students fulfilling course learning objectives and articulating how these tenets could be seen in the community, service-learning can facilitate the application of academic learnings in a community-based setting.

Through participating in this online service-learning course, students developed an appreciation and respect for the community partner and community. This aligns with prior work indicating that medical students appreciate community exposure from participating in service-learning as a component of their curriculum (Essa-Hadad et al., 2015). Student appreciation and respect may stem from students self-selecting their community partner. This may result in a preexisting investment in the organization that is further emphasized through the service-learning experience. Moreover, student appreciation and respect could merely originate from the experience itself through interacting with the organization and the populations it serves. This experience allows students to be involved with vulnerable populations and establishes a deeper connection (Essa-Hadad et al., 2015). Some students expressed the desire to continue to serve their community following the conclusion of the course, which highlights the appreciation for the connections made. Of those with interest in continued service, a small portion desired to continue to address food insecurity. This may, in part, be due to their appreciation for the community partner and their efforts to ameliorate food insecurity after witnessing it first-hand.

The findings from the evaluation of this Type I e-Service-learning course also indicated that in addition to serving as an effective avenue for students to understand the complexity of an issue, the course also helps improve students' professional skills and civic-mindedness. Students developed professional skills such as empathy, understanding, and communication skills that are transferable to other environments. This is evidenced by their expression of emotion and appreciation and respect for community partners and is consistent with prior work indicating that eService-learning can facilitate development of empathy (Faulconer, 2020; Gasper-Hulvat, 2018; Marcus et al., 2019) and listening skills (Gasper-Hulvat, 2018; Sun & Yang, 2015). Student investigation of community partners and subsequent selection may also contribute to the development of professional skills and civic mindedness. Given the demonstration of these professional skills in the community, this framework can create more civic-minded students who, upon successful completion of the course and conferring of their degrees, will matriculate into various industries. This study adds to the existing body of literature indicating that eService-learning can allow students to engage in "transferable skills refinement" (Faulconer, 2020) and create more civically responsible and socially consciousness individuals (Bourelle, 2014; Early & Lasker, 2018; Marcus et al., 2019; Schwehm et al., 2017).

Overall, the findings support that this particular service-learning framework helps students become more well-rounded. This proves to be advantageous when looking for jobs upon graduation. In 2020, the Association of Public and Land-grant Universities (APLU) identified 11 gaps in employability skills, including "build[ing] professional relationships," "identify[ing] and analyz[ing] problems," and "communicat[ing] accurately and concisely" (Crawford & Fink, 2020). A service-learning experience can also be an experience that students may choose to highlight on a resume (Helms et al., 2015). Using the framework where students self-select a community partner may help students build professional relationships, potentially more so than if told by the instructor with whom they will be working for the semester. As evidenced by students' ability to understand the complexity of community food security, an online service-learning course may also help students see this complexity in action in the community and improve their ability to identify and analyze problems. Finally, requiring students to communicate with the community partner to establish the semester contract and having students reflect on their experience through critical reflection papers may help students build more effective communication skills.

This framework used in this Type I eService-learning course provides an example for facilitating student community partner identification for an online service-learning course. Instructors seeking to apply a similar framework for helping students understand the complexity of topics within their own disciplines may consider the key components of this approach:

Community Partner Identification Assignment: In one of the first assignments of the semester, students identified three possible community partners and ranked their preference for partnership. This process may have resulted in students spending a greater amount of time considering with which community partner they planned to work, increasing their investment in the service component of the course. The student self-selection model likely allowed the student to select a community partner whose goals and values aligned with their own. The student demonstration of appreciation and respect may also have been a result of this prior investment in community partner identification. This assignment also helped to establish communication between the student and instructor and allowed the instructor to ensure the student was selecting a community partner that meets the requirements of the service component of the service-learning course.

Critical Reflection: Critical reflection is essential for helping students articulate their course learnings. Facilitating critical reflection through a final response paper can allow the student to reflect on the service as a whole to understand their course learnings within the context of their service. Providing prompts for the student to reflect on can encourage students to reflect on specific course objectives, thus encouraging further learning. While this paper focused on the outcomes of the post-experience critical reflection paper, students also completed a series of other service-learning assignments, including group discussion board posts, which helped them compare and contrast their service-learning experience with their peers' experiences.

This study extends prior findings related to online service-learning courses and demonstrates the impact of implementing an online service-learning course. Using this

framework, the student is responsible for identifying the community partner agency where they will complete the service component of the course. In using this model, the course instructor allocates the task of identifying and vetting community partners to the students (Nielsen, 2016). Establishing and maintaining service-learning partnerships can be time-consuming, and relying solely on the instructor for this work may limit partnerships to the network of the instructor. However, involving students in community partner identification allows for expanding the reach of the university's community engagement (Faulconer, 2020). The effectiveness of this approach for community partner identification is evidenced by these students' ability to identify community partners in their own communities, under the direction of the course instructor. Further, given the success of this model, the present framework is scalable and, therefore, can be used with larger class sizes. This is advantageous because service-learning is classified as a high-impact experience (Kuh, 2008), and many universities seek to increase student participation in high-impact practices. Given that service-learning is lacking in STEM disciplines (Faulconer, 2020), this framework may offer a more realistic way to help increase service-learning in STEM courses, while reducing the time investment for the instructor. Using this framework, more students can be exposed to service-learning and reap the benefits of a high-impact experience. Additionally, this approach may make it easier to increase the class size in a service-learning experience; increasing the class size allows for more community partnerships and more service in the community.

Limitations and Future Directions

It is important to acknowledge that students submitted critical reflection papers and received a grade. Therefore, in some cases, students may have included information in their papers that they believed the instructor wanted to hear, with the hope that those "correct answers" would earn them a higher grade. To limit this effect, instructors crafted the critical reflection questions to encourage students to think critically and offer multiple perspectives about the experience – not just the most rewarding experiences. However, if a student did write what they thought the instructor wanted to hear, the research team would not have been able to separate those types of responses from genuine learning and reflection.

It is also worth noting that the method of academic material delivery and development of course learning objectives likely has an impact on the degree to which the course objectives are met. As a result, replication of the course design may yield different results on student learnings and overall experience from the service-learning course. Additionally, given that students self-selected their community partner in the context of an online service-learning course, these findings may not be applicable to in-person service-learning courses or service-learning courses in which the instructor selects the community partner for the student.

Student self-selection of the community partner for the service component of the service-learning experience lends itself to a more meaningful experience. Future studies could explore if a more meaningful service-learning experience impacts long-term retention of academic material and sustained community involvement. Additionally, future studies could investigate whether student engagement in service-learning

experiences creates a competitive advantage for students as they seek employment post-graduation.

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About the Authors

Hailey T. Bramley, BS is a graduate of North Carolina State University. During her time at NC State, Hailey assisted with nutrition education research and nutrition curriculum development. Hailey continues to pursue her passion for research through the clinical research industry where she works to facilitate the delivery of innovative treatments to the patient's bedside.

Lauren D. Nolley, MNutr is a graduate of North Carolina State University and a Clinical Operations Lead at a global, clinical-stage biotechnology company engaged in developing novel therapies for cancers and senesce therapies. Her studies involve evaluating the effects of nutrition and diet on pharmacokinetic efficacy for hematological cancers. She plans on implementing knowledge learned in future studies and publications focused on nutrigenomics.

L. Suzanne Goodell, PhD, RD is a Professor of Nutrition and Director of Graduate Programs for Nutrition Science at North Carolina State University in Raleigh, NC. Dr. Goodell is a qualitative researcher who specializes in in-depth interviews and document analysis.

Natalie K. Cooke, PhD, RDN (Corresponding Author) is an Assistant Professor of Nutrition and Director of Undergraduate Programs for Nutrition Science at North Carolina State University in Raleigh, NC. Dr. Cooke engages in scholarship of teaching and learning research, with the goal of improving college students' self-efficacy in nutrition science-related skills. Her research has involved developing best practices in the design and implementation of service-learning programs and the impact of innovative teaching techniques and technologies on classroom success and self-efficacy. Contact: nkcooke@ncsu.edu

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