

FoodUCation: A Graduate Level Community Engaged Learning Project

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Abstract:

Community engaged learning involves using knowledge to provide solutions to community needs and is widely integrated in higher education across North America. These experiences connect community service with academic study, and the reported benefits include enhanced academic learning, promotion of skills and knowledge needed for leadership, an increased sense of civic responsibility in students, and development of an inquiring mind and imagination. Community engaged learning may be of particular interest in graduate level studies, as students are focused on the development of skills that will be of value in their chosen vocations. In this paper, we describe the development, activities, and impact of a community engaged project called FoodUCation from the graduate student perspective. The mission of the FoodUCation program is "to promote a novel approach to healthy eating known as 'lifestyle medicine', which focuses on food consumption for optimizing health and performance". The FoodUCation project was developed as part of a one-semester graduate course and was piloted in a local elementary school community partner. Student responses to the FoodUCation project were very positive, and resulted in extension of the project beyond the course in which it was developed. Overall, the experience of the graduate students was highly positive, and demonstrates that graduate level community engaged learning creates unique opportunities for students to learn and develop relationships and skills that have tangible benefits.

Key Words:

Community engaged learning, service learning, community-based learning.

Introduction

Community engaged learning, also known as service learning or community-based learning, involves using knowledge to provide solutions to community needs. Community-based learning is widely integrated in universities and colleges across North

America, both intra- and extra-curricularly, with organizations such as Campus Compact and Learn and Serve America promoting civic engagement in higher education (Hollander & Meeropol, 2006). Most universities and colleges currently have some sort of opportunity for students to engage in community-based learning, although the extent of integration into academic courses is somewhat less at research-intensive institutions (Hollander & Meeropol, 2006). An array of positive outcomes have been observed in research associated with community engaged learning in a variety of disciplines. For example, in medical and nursing training, a recent randomized controlled trial found that a 10-week experience with aged adults increased students' overall knowledge of aging and reduced negative attitudes towards older adults (Leung et al., 2012), while a program at the University of Saskatchewan called "Making The Links" increased social accountability among students (Meili et al., 2011). Community engaged learning connects community service with academic study, and the reported benefits include enhanced academic learning, promotion of skills and knowledge needed for leadership, an increased sense of civic responsibility in students, and development of an inquiring mind and imagination (Ehrlic, 2005). Community engaged learning may be of particular interest in graduate level studies, as students are focused on the development of skills that will be of value in their chosen vocations.

Given the reported benefits of integration of community engaged learning in higher education, it is of particular interest to consider specific examples of the types of projects that exemplify this type of activity. In this paper, we will describe the development, activities, and impact of a community engaged project developed in a graduate course in nutritional sciences at the University of Guelph in Winter 2013. The course, Applied Functional Foods & Nutraceuticals, encourages students to develop a project involving product, service and educational components, with the intention of implementing the finished product in the community. Students engage in group selection, formation and project conceptualization, and active recruitment of community organizations and members working in project-related professions to develop partnerships. In this project, called FoodUCation, students first identified a gap in nutrition education in the Ontario elementary school curriculum, and then sought out appropriate community partners for the projects' development and implementation. During the 12-week course, the class met weekly to provide feedback on each group's progress. Throughout the semester, groups were also required to conduct oral presentations on various aspects of the project. During Week 12, groups participated in a final half-day, public exposition to display and promote/defend their project to community members, and University of Guelph students, staff and faculty. Throughout and after completing the course, students were provided with ample opportunity to debrief, reflect on the group processes and experiences, provide and receive written and oral feedback, and perform self-evaluations. These processes contributed to the students' narrative, which will serve as a foundation to map out the learning experiences presented in this paper.

Course Description

It is relevant to begin this narrative by considering the general activities and objectives of the course in which the community engaged project was developed, Applied Functional Foods & Nutraceuticals.

During week one of class, students were asked to develop three potential project ideas that were targeted towards specific populations. In week two, students shared their individual ideas in groups of four and collectively chose the three most plausible and innovative project concepts which were then shared with the class. This led to a bank of project ideas which students used to form large groups based on a collective interest on a broad topic area and then further refined the project concept. These in-class exercises helped prepare the students for the next phases of the project, to solidify a project topic and connect with community partners.

During week three, each student created a self-reflective e-portfolio which was shared only with the course facilitator to provide a well-rounded view of each individual in the class. The course facilitator used this information to suggest changes to group composition if there appeared to be a lack of diversity of background knowledge or possible antagonisms of personality in the group. This extensive group formation process (approximately $\frac{1}{4}$ of the course) was likely critical to the development of groups with functional and cohesive group dynamics allowing for creative expression and learning progression.

Once groups were finalized in week three, further refinement of the project topic during week four involved a number of class and group activities that ensured all aspects of each project were considered. The activities included classmates rating other groups' potential project ideas from 1-3, groups preparing a short presentation on the top-rated project, sharing ideas for potential community partners, and project summaries posted in the online forum to update fellow classmates with major developments, obtain feedback, and disclose remaining tasks. Weekly class time was devoted to various group activities and periodic presentations on major project developments, allowing for immediate feedback from classmates.

During weeks five to twelve, the project was developed, with activities including: outreach to potential community partners, creation of a conceptual business plan for executing the program, development of learning objectives/outcomes, and the 'actions' related to the chosen project. In addition to weekly online summaries, in-class activities, and presentations, students were required to provide individual and specific feedback on the progress of other groups based on that week's assignment. This allowed groups to incorporate new ideas into their project prior to the following class. The feedback provided by classmates proved to be invaluable for groups when making critical decisions. Internal consensus between group members and classmates also helped to build confidence prior to initiating involvement of community partners. Once community organizations and community members working in project-related professions were brought in, their input added another layer of complexity to the decision making process. As evidenced by projects that evolved over the course of the semester, the act of continually giving and receiving feedback was a dynamic process vital to the final identity of each project. The semester culminated with a final project exposition with presentations to the University community.

The FoodUCation Project

As previously described, projects evolved through shared ideas, which were categorized as a product, service or education and were further distinguished based on

the projects' target populations. For the project that came to be known as FoodUCation, the group identified the need for more advanced nutrition education for elementary-aged students in the early stages of project development. This need was identified based on research of current provincially funded programs, the Ontario curriculum Healthy Eating Initiatives, and a lack of nutritional education in school environments. The Ontario government recognizes the importance of creating a healthy learning environment for children, and that schools play an important role in educating and encouraging children to eat healthy (Government of Ontario, 2010). Moreover, childhood obesity is a growing concern in developed countries, and can be positively influenced by lifestyle interventions (Martin et al., 2014). However, neither the Ontario elementary school curriculum nor current non-curriculum programs are adequate to progressively teach children the fundamentals of nutrition in the context of current, real world issues regarding food labeling, security and sustainability. Therefore, FoodUCation was developed to supply the demand for an engaging and progressive nutrition education program that is designed to promote lifelong healthy eating habits among elementary school children.

In contrast to most current programs, the students decided to run FoodUCation as a not-for-profit that is offered during school hours, which allows for a cost-free service that is available to all students. The mission of the program is *“to promote a novel approach to healthy eating known as ‘lifestyle medicine’, which focuses on food consumption for optimizing health and performance”*. The program offers a novel approach to teaching children through progressive nutrition education, exposure to outside knowledge and a refreshing perspective on learning, by actively involving volunteers, parents and educators from the community in these learning experiences. This generates a unique learning environment for which there is relatively little competition in the current market, and creates the potential to capture the entire market of educators, parents and elementary school children across the province and beyond. An overview of the FoodUCation project is provided in Table 1.

Table 1. Overview of the FoodUCation project

Aspects of Project	FoodUCation
Type of project	Education
Project concept	Fill gap in nutrition education in Ontario elementary schools
Primary partners	Local elementary school Dr. Genevieve Newton, Human Health and Nutritional Science, University of Guelph
Venue	Classroom (facilitators visit school)
Target demographic	Kindergarten – Grade 8
Program run-time	40 minutes – 1 hour
Project development	Built new program Project came before partner

The program is based on a set of age-specific goals and associated educational toolkits, which consist of age-appropriate, engaging activities. A new goal is implemented every second year, in Kindergarten, Grades 1/2, 3/4, 5/6 and 7/8. However, there are two unique toolkits per goal, allowing students to be introduced to new activities and concepts on a yearly basis. Each toolkit includes interactive activities and resources that educators and parents are encouraged to use throughout the year to help maintain the students' interest in nutrition and continue to expand their knowledge, both in the classroom and at home. The learning objectives and examples of specific activities developed for different grades are provided in Table 2.

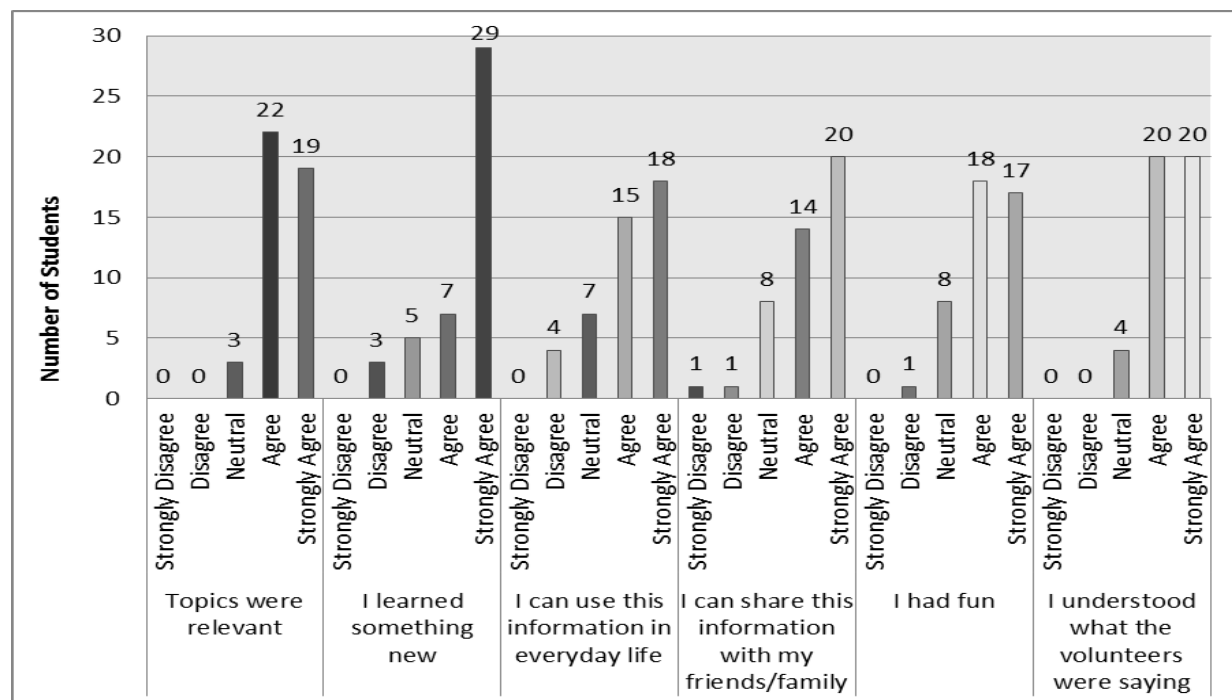
Table 2. Learning objectives and activities of the FoodUCation project.

Grade Level	Learning Objectives	Specific Activities
Kindergarten	Students will distinguish healthy foods from unhealthy foods and build a foundation of healthy living by using activities that promote an understanding of “always”, “sometimes” and “special” foods.	<ol style="list-style-type: none"> 1. Felt board with three columns for always, sometimes and special foods for children to stick pictures of food items and discuss their placement. 2. Red, yellow, green light activity where instructors yell out food item, children decide which category/colour it falls into, and move at a speed according to the colour of the traffic light (i.e. Green = run/skip/jump, yellow=walk/march, red=stand still).
Grades 1 / 2	By focusing on the colours of foods, students will learn the basic concept of food groups, how much of a certain group should be consumed and why certain foods are good for you.	<ol style="list-style-type: none"> 1. Bingo played with cards that have different pictures of food on them, complimented with clues that describe the food and prompting questions to further repeat concepts. 2. Children draw themselves as their favourite food and must include every food group and only one “special” food in their drawings.
3 / 4	Through the concept of decision-making, students will begin to generate an understanding of micro and macro nutrients, as well as why certain nutrients are good for you.	<ol style="list-style-type: none"> 1. Instructors use online nutrition calculator from popular fast food restaurant to make a typical meal and have students analyze the nutritional composition. Students will then try to plan their own “healthier” meal at this restaurant using specified menu options on their handout and will analyze their meal choices and justifications together. 2. After interactively discussing macro and micro nutrients and their major functions for the body, students will play a Jeopardy game going over this material.
5 / 6	Students will begin to develop an appreciation for specific nutrients and the role they play in everyday healthy living by learning how to read and understand labels on food products.	<ol style="list-style-type: none"> 1. Students are separated into groups to compare two similar products and complete worksheets looking at various components of the food, such as; ingredient list, nutrition facts table, health claims, pictures, endorsements, etc. Groups present their findings and decide on a healthier product. 2. Show students advertisements of common products sold in supermarkets and analyze them for their content, accuracy, and truthfulness in what they are claiming about their product.

Grade Level	Learning Objectives	Specific Activities
7 / 8	Through the investigation of food products (i.e. FFNs), students will begin to appreciate “food as a medicine”, and to develop an understanding of the power of food in preventing and reducing risk of disease states.	<ol style="list-style-type: none"> 1. Students are separated into groups to rotate through stations analyzing 3 different products, some of which are FFNs (i.e. Red Bull vs. Vitamin Water vs. Coffee), to look for sugar content, ingredients, claims, bioactives, etc. 2. Students are separated into groups which rotate through stations looking at herbs and spices to reduce disease risk or treat common illnesses.

As part of the community engagement of the project, students developed a relationship with a local elementary school that allowed them to implement FoodUCation in several classes. During the twelve week semester of the Applied Functional Foods & Nutraceuticals course, the FoodUCation toolkit for Grade 7 and 8 was piloted. In the final two weeks of the semester, FoodUCation toolkits reached 63 students during three individual workshops. The pilot workshops were determined to be successful through the compilation and analysis of data obtained from feedback surveys given to the students after each session.

Figure 1. Feedback from FoodUCation sessions with grade 7 and 8 students



Feedback received from the grade 7 and 8 students is shown in figure 1, and it can be seen that the majority of students either strongly agreed or agreed that the topics covered were relevant, that they learnt something new, that the information was useful for everyday life, that the information could be shared with friends and family, that they had fun, and that they understood the information presented to them. Due to this preliminary success, the group continued to pilot toolkits to the other grades into the spring and early summer of 2013, and they presented their project at a local teaching

and learning conference. One member of the group has even translated her experience with school-based nutrition education into a PhD project, and continues to work with the elementary school with whom a community partnership was established during the FoodUCation project.

Overcoming Challenges of the FoodUCation Project

Despite the overall success of the FoodUCation project, there are many challenges inherent to completing community-engaged projects. Community-engagement projects are much more prevalent in other disciplines such as nursing (Drevdahl et al., 2001), public health and social studies, but relatively new in the field of human health and nutrition, thus adding to the barriers and challenges faced by these students. While it is evident that nutrition is applicable to everyday life, human health and nutrition students view research knowledge from a different perspective than the general public. This is due in part to the years spent studying nutrition at a deep level, recognizing the effects nutrition has on the whole body, being aware and having access to research, and how the results are not always communicated effectively to the public. Viewing research from this perspective can often give the students an unbiased view, helping to overcome the difficulties of communicating with the public. Several challenges, including time management, knowledge translation, group dynamics and establishing community partners, were encountered, which will be described in this section along with comments regarding how these were overcome.

(1) **Timeline:** Timelines played a significant role in the FoodUCation project, as ideas required ample time to properly develop while students received feedback and reflected on their progress. The short 12-week semester presented difficulties when working with community partners and coordinating with their available time. This was evident in the FoodUCation project as the group member's involvement with the project extended well beyond the 12-week semester and into the Spring and Summer of 2013. Flexibility and understanding from both parties, the group members and community partners, allowed students to accomplish as much as possible in the short timeline or to extend the project beyond the semester.

(2) **Knowledge translation:** This course provided a unique opportunity for students to apply knowledge, translation and transfer (KTT) skills in the realm of human health and nutrition. With children in a variety of different life stages, programs and activities need to be targeted specifically to their level of understanding. Therefore, group members were challenged to synthesize and interpret knowledge in order to relay concepts in non-scientific, age-appropriate language for elementary school children. Research was conducted by referencing the school curriculum, reviewing lesson plans for children in each age range, and seeking feedback from teachers and parents of children in order to ensure concepts were relayed effectively and appropriately to the children.

(3) **Group dynamics:** Many challenges that the students faced were related to group dynamics, such as setting schedules for group meetings and work sessions, while also accommodating the professional and academic obligations of each group member. Open lines of communication, flexibility with communication styles and meeting times, and flexibility with respect to the workload and other group members'

schedules helped to build an efficient and respectful work environment. The long process of group formation that matched students with complimentary career goals and personalities aided in producing this smooth and productive work environment. The group members of FoodUCation also recognized that specific goals should be set to benefit the individuals within the group, as well as the group as a whole. Therefore, generating self-motivation and self-direction within the group to develop weekly short-term goals or deadlines was critical towards the groups' success. In setting these goals, group members were able to create tangible materials, such as a project portfolio for presentation to community partners.

(4) Establishing community partners: As the group members formed partnerships within the community, additional challenges arose. Students were expected to satisfy the partners' and the course expectations. These demands were often significant; therefore, the students focused on negotiating with different parties and setting specific goals in order to generate feasible outcomes. Although the members of the class were responsible for developing their own projects, many community partnerships contributed to the process of community engagement. Each community partner in the FoodUCation project contributed a unique point of view and expertise throughout the stages of program development to assist with decision-making processes. The intricate involvement of these partners demonstrates the essentiality of developing community partnerships in order to successfully engage the community and maximize individual learning experiences.

(5) Maintaining momentum: Throughout the semester, the class revolved around constant group interaction and class feedback. For example, the provision of short-term deadlines for in-class presentations and assignments allowed for continuous feedback from fellow classmates. Feedback in the form of verbal discussions and online discussion boards was essential to decision-making and they highlighted the importance of respecting differences in others opinions or ideas. Moreover, feedback was often accompanied by self-reflection and small group debriefing sessions, which allowed for further group and project development. These various forms of feedback and class interactions enabled the group to maintain momentum of the project with fresh ideas and input from others and decisive decision making in times of need.

Despite difficulties and barriers to community-engaged, project-based learning, the group members of FoodUCation were able to successfully develop a project over the semester and implement it in the local community. Recognizing potential limitations and developing strategies to overcome those limitations were essential to the project's success.

Conclusion

Overall, the experience in the FoodUCation community engaged learning project was highly positive. Nonetheless, there were some challenges that were encountered, including conforming to a short timeline, varying group dynamics, and meeting the exacting demands of the community partner. These challenges were mitigated through an emphasis on open communication and flexibility, which ensured harmonious group dynamics. The long process of group formation also helped to ensure that group members shared similar goals and attitudes. As well, the group fostered self-motivation

and self-direction within the group through development weekly short-term goals or deadlines. The positive relationship with the community partner was undoubtedly an important component of the success of this project, contributing a unique point of view and expertise to groups throughout the stages of program development to assist with decision-making processes, and providing resources and opportunities. The student perspective based on this experience is that participation in community engaged learning at the graduate level is highly valuable, and creates unique opportunities for students to learn and develop relationships and skills that have tangible benefits.

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