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A Model to Incorporate Meaningful Community Engaged Learning Opportunities into Medium

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A Model to Incorporate Meaningful Community Engaged Learning Opportunities into Medium to Large Classes

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Abstract

Community engaged learning (CEL) has been identified as a high impact educational practice that can have profound influence on learning and improve student engagement (Kuh, 2008). Despite the potential to provide a meaningful learning experience, CEL opportunities are not widespread at large research institutions, and most examples arise from optional co-curricular activities or small classes (Holander, 2011). Current realities of increasing class sizes and decreasing resources can make implementing CEL challenging. Creative thinking is required to modify the critical elements of successful CEL to suit broader educational needs.

This paper provides a tangible model for CEL assignments that can be adapted to suit medium to large classes, with an honest discussion of the lessons learned in the process from student, faculty and community perspectives. Based on key concepts of reciprocity, shared decision-making and mutual benefit we designed a novel CEL assignment in a large 4th year course (>100 students). Briefly, student teams researched one of five priority areas identified by Wellington-Dufferin-Guelph Public Health (WDGPH) to write an evidence-based literature review. Based on these findings, students worked with WDGPH experts to translate their research into practical recommendations and tools to advance WDGPH programming. An end-of-semester showcase was used to highlight these applied projects.

Students identified real world relevance and the opportunity to be creative as the main advantages of the assignment. Surprisingly, community partners identified the opportunity for leadership and mentorship as an unintended but welcomed benefit to the program. From a faculty perspective, the time required to coordinate and grade the projects during the teaching semester was manageable although the quality of student projects varied significantly. Future offerings should consider strategies to provide more tailored feedback to all students and to encourage a balance of effort between the research and applied aspects of the CEL project.

Keywords: community engagement, knowledge translation, knowledge mobilization, creative assessments, large classes, public health

What is Community Engaged Learning?

A recent meeting of the Association of Universities and Colleges of Canada concluded that there is an urgent need to improve the delivery of content in undergraduate education and outlined specific activities that can be used to engage students in the learning process, including community engaged learning (CEL) (AUCC, 2011). Community engagement can be defined as “a collaboration between institutions of higher education and their larger communities for the mutually beneficial exchange of knowledge and resources in a context of partnership and reciprocity” (New England Resource Centre for Higher Education, n.d.). Often

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referred to as experiential learning, CEL encourages the student to think critically, enhance problem-solving capabilities and improve the skills needed to resolve conflict (Bandy, 2015).

Six models for integrating CEL into higher education have been described and cited frequently (Heffernan, 2001). Each model should be based on the key principles of reciprocity, mutual benefit, and shared decision making, with consideration given to student, faculty and community partner experiences (Heffernan, 2001). CEL is often perceived to be synonymous with service learning, wherein students go out and work directly with a community organization. In science courses, this often takes the form of undergraduate students developing activities for teaching science to younger students or community groups (Begley, 2013; Donaghy & Saxton, 2012; Larios-Sanz, Simmons, Bagnall, & Rosell, 2011; Mead & Kennedy, 2012; Sherman & MacDonald, 2009). Unfortunately, this service-learning model can be challenging to coordinate (especially with transportation off campus) and may become burdensome as student numbers increase. Problem-based community engagement is another form of CEL where students apply disciplinary knowledge to address a real-world problem (Heffernan, 2011), similar to a "consultant" type role, while community partners benefit from useful solutions to relevant issues. Examples of this model are common in social sciences (Bowman, 2012), but are less frequently described in the science education literature. Regardless of model used, all forms of CEL are considered high impact educational practices, whereby the experience can increase intrinsic motivation, promote deeper learning, improve retention, integration, and transfer of information, while improving student engagement and satisfaction (Kuh, 2008). Despite these noble goals, CEL is not widespread in higher education, especially at large, research-focused institutions (Hollander, 2011).

Specific Challenge: CEL in Large classes

Class size might be a limiting factor when instructors are considering implementing CEL into their course. Notably, many published examples of CEL assignments come from small undergraduate courses (Begley, 2013; Mead & Kennedy, 2012; Larios-Sanz et al., 2011), professional programs (Bowman, 2012; Elam et al., 2013), or as an optional project for a select group of students within a larger course (Donaghy & Saxton, 2012; Sherman & MacDonald, 2009). A Higher Education Quality Council of Ontario (HEQCO) investigation into large classes highlights five key issues commonly identified by faculty as challenges to teaching in a large class (Kerr, 2011), which might make implementing a new pedagogical strategy difficult. Specifically these areas include: student issues, course management and curriculum issues, resources and institutional support, assessments and teaching and learning strategies (Kerr, 2011). In the HECQO investigation, a concrete definition of what constitutes a large class was not provided. However, most large introductory courses had several hundred students, while senior level courses were considered large with as few as 66 students, suggesting that the number of students that constitutes a large class may be inversely related to year of study (Kerr, 2011).

Objective

With careful consideration given to the five areas identified by HEQCO (Kerr, 2011) (Table 1), we sought to develop a meaningful CEL opportunity that could be delivered to all

students in a large course, without taxing the resources allotted for the course or any other party involved.

Table 1
Potential Challenges of Implementing CEL into a Large Class and Suggested Solutions

Large Class Issue	Potential Challenges	Potential Solutions for CEL in Large Classes
Student Issues	unequal motivation and effort towards CEL across a large class	• provide choice of topics to encourage intrinsic motivation • when quality of projects does vary, implement a screening process at the faculty level before reaching community partner • self-selected group sizes may result in minimal group issues
Course Management & Curriculum Issues	bridging course content with CEL project	• invite community partner in for guest lecture to entire class • consider order of curriculum topics that may only advantage some
	administrative challenge of coordinating many projects and stakeholders	• use course management system group and dropbox functions to submit assignments, provide access for grading etc. • streamline coordination by having a single partner with multiple projects; identify one primary contact person.
Resources & Institutional Support	limited budget for extra TA support, off site transportation etc.	• involve a librarian/community partner to assist with providing feedback • bring community partners in instead of sending students out • optimize partner resources with group travel on a single day, or electronic communication when possible
	ensuring sufficient space for community-student interactions	• book atriums or other communal student space during regular class time to minimize student conflicts • book small classrooms/meeting rooms to facilitate expert meetings when possible, or create smaller groups within a large lecture hall
Assessments	ensuring academic rigour of varied CEL projects	• consider both traditional and creative assignments (e.g., a paper and a creative translation) • include an element of critical reflection to reinforce learning
	time commitment required to evaluate many projects	• use both group and individual assessments to keep accountability of all students and minimize grading load

Teaching and Learning Strategy	aligning the CEL project with existing course learning outcomes	• develop CEL projects for courses that emphasize problem solving or knowledge mobilization

Note. This table summarizes information provided by Kerr (2011).

This paper describes the design and implementation of a CEL project into an existing 4th year class (>100 students), with a particular emphasis on timeline and resources required to execute it. We outline the assessment structure and share experiences form the lens of faculty, students and community partner, with suggested improvements and further modification to suit a variety of courses.

Course Context

This CEL project was a mandatory assignment incorporated into a required fourth year Human Development and Aging course in the Kinesiology program at the University of Guelph-Humber in the Fall 2014. The course considers the impact of lifestyle (nutrition and exercise) during the growth, development and normal aging of the human, focusing on specific time points when lifestyle variables have a critical role in health. The course content is relatively broad, and offers some flexibility to highlight special topics of relevance to our community. The course enrolment was 110 students, with one teaching assistant. Notably, the course enrolment was projected to increase to 180 students within one academic year, so the project was designed with 100-200 students in mind. The class met twice a week (1hr 40 min and 50 min time slots), and the primary mode of delivery was through in-class lectures. In previous offerings, students were assessed by midterm (30%), final exam (30%), and a term paper (40%). With the incorporation of CEL project, the new assessment structure was: midterm (25%), final exam (30%), and CEL project (45%).

Community Partner: WDGPH

This project was designed in partnership with the chronic disease, injury prevention and substance misuse unit of Wellington-Dufferin-Guelph Public Health (WDGPH). This unit consisted of an 11-person multidisciplinary team, with one manager, three nutritionists, two public health nurses, and five health promotion specialists. The team's mandate covered all work related to education and skill development, policy and advocacy, research and evaluation of programs and supportive environments for a population of 250,000 across 16 municipalities with an approximate budget of $30,000 per year. Much of this work targets specific age groups, ranging from birth to older adults, and, therefore, was well-aligned with the topics covered in the course. The very modest budget required creative use of resources and reinforces the need to leverage the existing strengths of other groups. Most importantly, WDGPH has a stated objective to build relationships with academia in order to leverage their capacity to operationalize evidence-based initiatives in the community.

What We Did: The CEL Project

The primary objective of our partnership was to align the research skills and capacity of senior kinesiology students with the practical insight of public health experts in order to improve the health of our community. To this end, WDGPH identified five priority areas central to their work that could benefit from an evidence-based solution, but they did not have the time or capacity to carry out. The students then completed a 2-stage project in self-selected teams of 2-4. First, students conducted an evidence based literature review (worth 20%). Then, they translated these research findings into recommendations and tangible, community-based solutions (i.e., their "applied project" worth 20%). In this arrangement, WDGPH would receive comprehensive literature reviews and creative ideas for solutions, while students would benefit from the practical experience of working on a community issue and an expanded professional network. Table 2 provides examples of the priority areas identified by WDGPH and selected student projects.

Table 2
Priority Questions Identified by Wellington-Dufferin-Guelph Public Health (WDGPH) and Sample Student Projects

WDGPH Question	Applied Projects by Students
1. Should high intensity exercise be recommended throughout pregnancy?	• Social media awareness campaign with pedometer challenge for at risk pregnant women. • Interactive website collating existing physical activity opportunities for pregnant women in the WDG area with an incentive program.
2. Does lack of sleep contribute to childhood obesity?	• Original artwork for print marketing materials promoting a "digital detox" to encourage healthy sleep. • A needs assessment survey tool to be distributed with end of semester report cards in elementary schools.
3. Is there evidence linking 100% juice consumption to childhood obesity?	• Advertising strategy using school buses for public health messaging promoting benefits of whole fruit over fruit juice. • Interactive display booth and information pamphlets at local school parent-teacher interview nights.
4. Are energy drinks safe for consumption by youth?	• Policy document surrounding labelling and marketing of specific serving sizes of energy drinks. • High school lesson plan and assessments highlighting the different serving sizes and caffeine content of popular energy drinks.
5. Does exercise in adulthood prevent the risk of falls in older adults?	• Design of a gardening program to strengthen muscles and balance using local facilities and parks. • Series of recommendations to improve accessibility and user friendliness of existing fall prevention programs in the area.

The CEL project was designed to continue to meet the learning objectives of the existing course (i.e., self-directed learning, communication skills, writing skills, critical thinking), while

also providing new opportunities. Specifically, on completion of this project, students would demonstrate competencies in:

1. Knowledge translation, by communicating research findings in multiple formats to a variety of lay audiences.
2. Problem solving, by applying their research skills to real-world challenges while working within the financial, time and personnel constraints of a community organization.

Importantly, all students received feedback on these outcomes from sources beyond just the instructor and teaching assistant (TA) (i.e., community partner representatives), thereby contributing to a more comprehensive assessment than previous models.

How We Did It: Timeline of Events and Key Decisions Made to Suit Large Classes

Because of the high number of students in the class (110), it was not feasible for all students to go out and work with WDGPH, as would be common in a service-learning model. Instead, WDGPH identified several pertinent problems ahead of time, and then provided mentorship to the students through a series of classroom visits, which is more loosely based on the problem-solving model of CEL (Heffernan, 2001). We deliberately chose to partner with a single community organization in order to streamline coordination and logistics. However, we also deliberately partnered with an organization that could identify multiple challenges and had multiple interested parties so that students had an element of choice in their projects and the workload was better distributed among several people.

An overview of the semester, focusing on the assessments and contributions of multiple people involved in the execution of this project is depicted in Figure 1. We believe that the key aspects of this CEL assignment that made it possible to deliver in a large class were:

a) shared assessment and feedback among many people: faculty, TA, community partner, librarian
b) a combination of individual and group assignments: individual small assignment, and group final projects
c) multiple groups worked on the same topic area: 110 students made up 33 groups, working on just 5 projects
d) community partner provided mentorship and guidance in the classroom setting: guest lecture, mentorship meetings, and final showcase feedback.

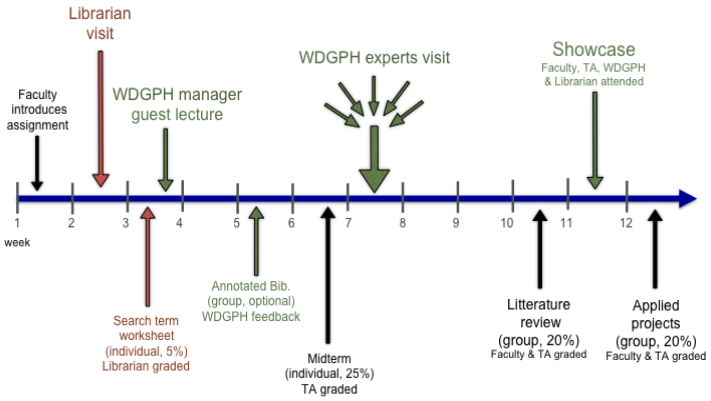

Figure 1. Timeline of CEL elements and assessments across the semester. Updates to this timeline for future offerings could include earlier and multiple submissions of the writing assignment (a shorter, evidence-based, proposal format) and an end of semester individual reflection.

Early semester: Understand the problem and individual research assignment. The instructor briefly introduced the CEL project on day 1 of the course. In order to ensure that all students were fully equipped to contribute to the group research project, the kinesiology librarian provided a special lecture in week 2 (~1 hour) to support a preliminary search-term assignment that was completed on an individual basis (worth 5%) and submitted in week 3 of the semester. The librarian took responsibility for grading all of the individual assignments, a process co-ordinated through the course management system. In week 3, the WDGPH manager gave a guest lecture to the class as a whole, explaining WDGPH's mandate and framing the priority issues to be tackled (~1 hour). Students received feedback on their individual search-term assignment by week 4, at which point they formed groups (if not done so already) and had the opportunity to submit an annotated bibliography to one of the five WDGPH topic experts for review. Only about 30% of groups took advantage of this optional interaction, and there was no formal grade given for this. The purpose of this optional assignment was to provide feedback about the quality of the sources being used from a public health lens, with particular focus given to the students' ability to locate and access grey literature.

Mid-semester: Expert meetings and focus on applied project. Midway through the semester (week seven), five experts from WDGPH returned to the classroom to meet with student groups according to their selected topic area. At this point in the semester, it was expected that students had already completed the majority of their research for their literature review and had an awareness of the current state of the evidence in order to inform their practical recommendations. Accordingly, the goal of the mid-semester expert meeting was to provide students with mentorship and guidance as they explored possibilities for the applied project and the challenges that might come in the operationalization of their recommendations. Often, large courses will use labs or tutorials to get a small group feel; however, that option did not exist for our course, so we used the expert meetings to group students according to the topic area that they selected to try and mimic the smaller group setting. Five smaller classrooms were booked on campus to accommodate each expert and all of the students working on that given topic (ratio of 1 community expert for approximately 20 students). During the 90-minute meeting, WDGPH experts were able to answer student questions about feasibility of interventions, sources of community support, previous programs that were successful or unsuccessful, etc. All student groups participated in the meetings, and while general (and in some cases specific) feedback was provided at this stage, the community partner was not expected to assign a grade.

End of semester: Group projects submitted and open showcase. The final assignments were submitted by groups towards the end of the semester (literature review week 10, applied project week 12), and were graded by both the faculty member and TA. The projects were all sent on to WDGPH for dissemination and review after the end of the semester, but WDGPH did not specifically assign a grade. In total, 33 projects were submitted from a class of 110 students. The applied projects were also presented publicly during regularly scheduled class time of week 11 by way of an open showcase in the campus atrium (note: the date chosen was based on space availability), which was attended by a representative from WDGPH and the broader

university community. The representative from WDGPH provided feedback to the instructor about the projects visited, which was passed along to student groups, but they were not required to provide a numerical grade.

How it Went: Faculty, Community Partner, and Student Perspectives

Students, faculty, and community partner team members shared their experiences through a variety of informal avenues for quality assurance purposes and in order to improve the project in subsequent course offerings. This information was then condensed to provide the perspectives presented here. A formal assessment of this model has not yet been completed; therefore it must be acknowledged that this anecdotal evidence may not be a fully representative cross-section of all individuals involved.

Faculty. From a faculty perspective, the most rewarding part of the assignment was seeing the enthusiasm from students while working on the creative, applied-project format. It was wonderful to see the special talents of individual students (web design, drawing, videography, etc.) that would have never come out using traditional assessment tools, and evaluating these applied projects was quite enjoyable too. The partnership with WDGPH provided a welcomed revitalization to the course, returning the emphasis to teaching transferable skills (research, communication, problem solving) and re-focused the content being delivered. One unforeseen by-product of a large class was the range of quality in both applied projects and literature reviews, in that some projects lacked effort or professionalism to be of any use to WDGPH, and had the potential to tarnish the reputation of the course. For future offerings, a screening process will be implemented at the instructor level such that poor quality assignments will not be passed on to the community partner. This problem might be less common in elective courses or courses where the CEL project is optional. Other minor issues that arose was the class time (1 hour 45 minutes) limiting the length of the end-of-semester showcase. Further, the wide range of topics (from pregnancy to older adults) made it such that lectures early in the semester may have benefitted certain projects more than others, since some age groups were not discussed until after the projects were mostly completed.

Community partner. The community partner reported that the time required to be involved with this initiative was manageable and well worth the benefit the organization received through participation (e.g., innovative ideas, relevant evidence). Specifically, the total "face-time" required by WDGPH for this project was 10 hours, divided between five people on three separate dates, plus a few hours to review annotated bibliographies electronically. Throughout the process, WDGPH experts provided qualitative feedback to students and were not required to assign a quantitative grade, although mentors said they would be willing to commit more time/feedback to the initiative if required.

One unexpected but positive finding was that the experts at WDGPH appreciated the opportunity to develop their mentorship skills. One downside of the first offering is that the topic areas selected may have been "too timely," in that by the time community partner received and thoroughly reviewed the student work (December/January), the information was almost too late to inform working groups that had been formed in early summer, when the

topics were first proposed. Careful consideration should be given to topic selection and the format for reporting the evidence to ensure that the student work is as useful as possible.

Another limitation of the first offering was that some experts had a sense of "broken telephone" where there was a misunderstanding between experts and students on everyone's expected role and level of preparation. This underscores the importance of the faculty member to clearly articulate the roles and responsibilities of all participants involved in the process (student/faculty/ partner).

Student. As expected, the strongest message coming from students was that they enjoyed the opportunity to be creative and apply their knowledge and skills to a real world problem. Students also agreed that the community partner was useful in providing feedback and giving practical insight, but liked that the professor or TA assigned the actual grade. An interesting message from students was that they valued the combination of the research based literature review followed by the applied project, since it made them feel more knowledgeable when working on the applied aspect of the project. Although many students said they spent a disproportionate amount of time on the literature review, resulting in a weak effort on the applied project. Some students explained that they could not move on to the second part of the project until they fully completed part 1, while others said they just see a literature review as being "harder" and more time consuming than a creative project.

Another potential concern based on student feedback is that the expert meetings may have varied in quality and effectiveness. This could be due to differences in student and expert preparedness/comfort on the topic, or could also be a reflection of students having different expectations about what the meetings should provide (i.e., should the expert give them an idea to pursue, or should the expert help guide the student with probing questions and things to consider based on a student generated idea; note: the goal was the latter). Since these small group meetings were the main opportunity for interaction with the community partner, this concern requires attention and a more thorough investigation. A final point raised by a few groups was that they were disappointed when the WDGPH representative was not able to visit every project during the final showcase.

What to Do Next: Improvements for Future Years

Based on the initial experience and feedback from multiple stakeholders, we will continue to develop this partnership and offer the CEL project, with updated community identified research areas and the following four course design changes:

1. New template for writing assignments

   Upon review of the learning outcomes, the lengthy literature review will be replaced with a shorter, evidence-based project proposal similar to an executive summary template commonly used by WDGPH. The goal of this improvement is to make the students' work more useful to the community partner, while still requiring strong research, critical thinking and communication skills. In addition, the early-semester individual search-term assignment will be replaced by an end-of-semester critical reflection. The goal of the critical reflection is to encourage students to reflect on their experience to solidify their learning, and this is the most common tool used to evaluate the success of CEL practices (Heffernan, 2001). Upon review, the lack of a reflection piece in the initial CEL project offering was an oversight.

2. Earlier due dates for assignments
   The new evidence-based project proposal will be due earlier in the semester, and students will be required to submit it twice. The first version is to be submitted by each group on week 4, for feedback by the community partner and grading by the instructor (worth 5%). Then, student groups will be given the opportunity to improve their proposal and re-submit a final version by week 8. This final submission must show improvements based on the feedback from community partner meetings, and will be worth 15%. The goal of this improvement is to encourage students to work on their projects right away, to allow for improvement and formative feedback, and also ensure sufficient time is allotted to the execution of the applied project.
3. Different format for expert visits
   Multiple experts from WDGPH will still meet with the student groups mid-semester, but instead of one expert meeting with all students working on the same topic for 90 minutes in a tutorial type setting, a schedule will be made such that each group has at least 20 minutes of one on one time with the mentor. In addition, since the expert has already reviewed the group's initial proposal and provided feedback on the research evidence, there will be a common ground to begin discussions. The goal of this improvement is to increase the quality, consistency and effectiveness of the mentor meetings, and to ensure accountability of student groups.
4. Longer, more publicized showcase
   The scheduling of the course has been changed to a single weekly meeting of 2 hours 40 minutes from the previous format of two shorter classes each week. The main reason for this change is to allow for a longer end of semester showcase. In addition, the community partner has committed to sending more representatives to the final showcase, and will also welcome the top student groups in each area to present their applied projects at the WDGPH head office. The goal of these changes is to ensure that students know their contributions and efforts are valued, to reward outstanding student work and to stress the equal importance of the applied project component with the more traditional research-focussed writing assignment.

Conclusions

CEL may be a useful pedagogical strategy for instructors looking to put course-based concepts into a real world context, enhance student engagement and encourage strong communication and problem solving skills. Although CEL opportunities are typically reserved for small classes due to the logistical issues required to connect hundreds of students with community partners, bringing a single community partner with multiple real world problems into the classroom setting may be an effective way to introduce CEL to large classes. Spreading the responsibility of evaluation and formative feedback between many team members, and having students work in small groups for several assignments also makes implementing CEL projects in large classes more manageable. Students and partners appear to value interaction in various formats, and partners may be more willing to participate than you might expect. Importantly, students enjoy the opportunity to be creative and be evaluated through less traditional assessments. While this paper reports on the design of a CEL opportunity suitable for large classes, and shares multiple reflections following its initial implementation, a formal

assessment of this model is required. Continued work will assess if this pedagogical strategy is more effective than traditional teaching methods for delivering key learning outcomes.

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