Rethinking Town and Gown

Putting research to work for the community

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Examining a model of knowledge mobilization between community organizations and the university.

Examen d'un modèle de mobilisation du savoir entre les organisations communautaires et l'université.

We count on social service organizations to take care of problems faced by our families, friends, and neighbours. Yet these organizations are at great risk. An estimated 50 per cent of these social agencies operate as charities and, within this group, 49 per cent rely purely on volunteer staff.

Public and private funding is simply not keeping up with demand. To obtain funding for even the bare minimum of services, benefactors are increasingly demanding that social service organizations demonstrate that their proposed policies and programs are based on the best available research and evidence. This demand is both reasonable and easy to make, but difficult to meet without the human and material resources that we take for granted in universities.

On the other side of the fence, academics are being increasingly pressured—especially in the social sciences and humanities—to show that their work has positive and practical social impact. These disciplines also attract a core of graduate and undergraduate students who come to university because they want to make a difference to society. It is a pity that these motivated students often have trouble obtaining employment after graduation commensurate with their interests and their scholarly and research excellence.

Thankfully, vibrant community-university partnerships can offer some small but sensible solutions to community needs and academic imperatives. Knowledge mobilization services are a good example of this. In effect, the university contributes the human and material resources and the community contributes a need for scholarly research in specific, real-world contexts. Students provide the energy and skills. Capacity is built for potential careers in the new knowledge economy. Everyone benefits.

For the past seven years we have built and honed a model for knowledge mobilization services at the University of Waterloo, and it seems to work. Community agencies ask university students in research methods courses to review and report on research related to the organizations' mission or policies. Through this process, research published in academic journals is put to practical use and informs board room discussions and decision making by community leaders.

The heart of our community-university partnership model is the systematic review. The same rigorous methods that academics use to conduct primary research are used in creating research reviews for community partners: reliability, validity, and transparency. This means that if another person conducted a review of journal articles at the same time, using the same systematic methods, they would draw the same conclusions about what the research says. This process goes beyond reporting one researcher's single study. Systematic reviews weigh the accumulated evidence. Systematic reviews are designed to be exhaustive and inclusive.

Systematic reviews are the mainstay of knowledge translation in the medical and health sciences. They help professionals create practice guidelines. Many are created and disseminated by the international Cochrane Collaboration, which provides the gold standard for systematic review methods. The difference in our work is that systematic reviews are created at the request and to serve the immediate needs of a specific community organization. They are not generated by the disciplinary interests of the researchers.

In a sense, the university and the community co-create systematic reviews. They work together through courses developed at the University of Waterloo: Community Based Research at the undergraduate level and Knowledge Mobilization to Serve Society at the graduate level. Here is how it works: review questions solicited from community partners are vetted to ensure their educational appropriateness, time frame, and the anticipated skills and interests of the students. To show the students that their work will have uptake and impact, community partners explain how the results will be used by the agency, when, in what way, and by whom. Will the results go to a board meeting, be used in a funding proposal, or go directly to the agency's clients? Knowing how their work will be used motivates students and provides direction for final dissemination style and formats (slide show, policy brief, summary report, etc.). At the same time, students in the class are taught to apply to secondary research the methods that they have already learned for primary research. Course materials such as the 2005 textbook, *Systematic Reviews in the Social Sciences* by Mark Petticrew and Helen Roberts, provide important background to the work.

Here is an example. Recently, research has been reported in the media suggesting that drug treatments for Attention-Deficit/Hyperactivity Disorder (ADHD) may have severe negative side effects for certain children. Parents whose children receive developmental and behavioural services from Infant and Child Development Services Peel are naturally concerned. Consequently, the agency's manager
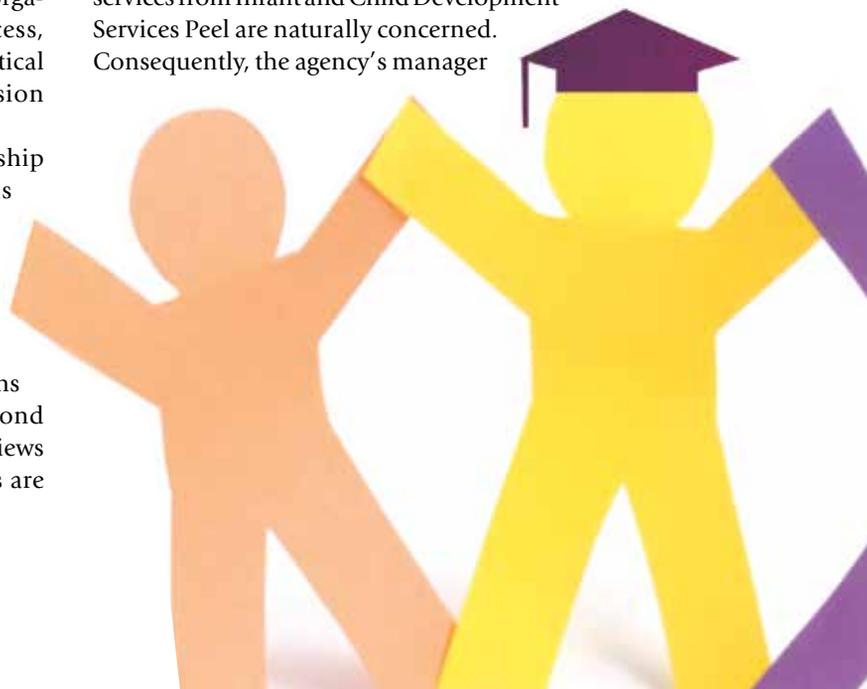
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proposed this question to the students: "What does recent research say about the effectiveness of treatments for children with ADHD that do not involve drugs?" Over the course of the term, a five-student team conducted the systematic review. It included all studies published in the two previous years. Of the 180 studies that the students identified, 53 studies attempted to answer the question scientifically with either head-to-head comparison of treatments or case studies of interventions. The research showed that behavioural rewards are still an efficient and effective method, but exercise and neurofeedback are also gaining recognition. The full results are posted at www.kimpact.ca/howwethink.

Over the term, students sometimes posed clarifying questions to the agencies by email, teleconference, and in person. Given the collaboration between community partners and student researchers, one might ask: How is the potential bias in interpreting and reporting results managed? Might community partners influence the results in favour of what they would like to see as supportive evidence for their vision, their funding proposals, and for validating their already existing programming? To deal with this potential problem, community agency input in the research review is limited to presentation, justification, and clarification of the research question. Community agencies play no role in gathering or analyzing the journal articles.

At the end of the term, the students report their results to the agency members. Typically the reports are first summarized for the community partners in classroom presentations. The questions that partners ask help the students highlight issues in the final written report. For example, community partners for the ADHD review asked: What was the most frequently studied method of treatment delivery? Did any studies address problems of children in identified cultural groups?

More than 50 systematic reviews have been conducted through the knowledge mobilization courses at the University of Waterloo over the past seven years. The model was developed in interdisciplinary graduate courses offered for nine terms. The course generated high interest, and the waiting list exceeded

available space each term (16 students, four projects). Students enrolled in the course came from all faculties in the university except Mathematics. The model was a success.

Community partners spoke highly of the quality of the final systematic reviews, commending them for the "layering of easily readable materials on top of progressively more depth." Others spoke of the value of the course to their organization, stating for example, "[the course] saved me countless hours of research and has packaged this material into a product that I can put to use in my business right away" and, "while working on funding applications for my program expansion, this report will be my 'bible'." Students made similar comments. One student said that "by actually doing a project with a stakeholder from beginning to end I've developed a better appreciation for the role of society in research and I've also seen how, with only a few tweaks to the overall research process, knowledge acquired can actually reach those who want it." Another student commented that, "a knowledge mobilization course should be an essential part of training and education for all graduate students and researchers. Understanding the research process is incomplete without it."

Thus far, a few students have gained employment as a result of their training. For example, after completing the graduate course and serving as the teaching assistant, one student is now the manager of knowledge exchange at a Canadian chronic disease not-for-profit organization in Ottawa. Other students report greater ease in obtaining research assistantships, co-op positions, and public health placements due to their training in knowledge mobilization.

After the nine terms, the course was scaled from a transdisciplinary graduate course offered by the Faculty of Arts to an upper-level undergraduate course in the Psychology Department. The 46 undergraduate students who have completed the course over the three terms that it has been offered successfully created 13 systematic reviews.

As examples, this year Keystone Child, Youth and Family Services requested and received a review of the research on the effectiveness, costs, and characteristics of short-term residential stabilization programs for youth in mental health crises. Conestoga College wanted to know

what the research says about using simulation of clinical practice in training physiotherapy and occupational therapy assistants.

Besides motivating students to learn systematic review methods, community partners also expand our dissemination strategies beyond those of a traditional academic report. For example, Infant and Child Development Services Halton taught us that review results need to be presented in one-page fact sheets when being delivered to government for funding policy decisions. Some agencies ask for narrated slide shows that allow managers to transfer review results from the student researchers to agency staff directly and effortlessly. In other cases, detailed research reports are translated by the community partners for their clients. A manager of one of the agencies gave us the following feedback: "I use the ADHD info every time I have a clinic and a client wants to talk with me about their options other than medication for ADHD." For example, a client had an opportunity to enroll her son with ADHD in a class in which they start the day by running up to four kilometres. The research review helped clarify the decision: "on the basis of what your students had told us, [the mother of the boy] enrolled him, and she says that three months later, he can run four kilometres, is full of pride about that, and, his ability to focus his attention has increased dramatically. She is ecstatic, the kid feels better about himself and the whole family functions better, she tells me."

The university makes the course possible and is pivotal in providing extraordinary library and internet resources. Students complete their exhaustive literature searches on library databases such as Scopus®, a database of over 20,000 scholarly journals. University access to RefWorks™ facilitates the team's management of journal articles. Desire2Learn® provides students with a platform on which to collaborate.

The University of Waterloo has a mandate (outlined in its Sixth Decade Plan, 2007-2017) to "Continue to strive to maximize its academic and societal relevance by: Working with partners in the public and private sectors to promote co-op education and knowledge transfer… Providing service to society through cultural enrichment and knowledge transfer." By offering both human and material resources through our courses, the university keeps this promise to its community.

Our knowledge mobilization courses are analogous but different from what is known as service learning. Students in the knowledge mobilization course learn about what their community agency does, what its needs are, and how the students can help. But they do this in their role as researchers. They see first-hand how research is useful beyond academia. From their contact with community partners, students learn about non-academic careers. Students who are set on a career in academia also benefit from the research review skills learned in the course. One graduate student remarked, "Having acquired these skills I will be able to use them in other projects, such as my current MA thesis research."

As we continue to strengthen our model for knowledge mobilization partnerships, the next steps are clear. First, our graduate level course was cancelled due to the lack of a funding model for interdisciplinary courses within the university, even though we know that students benefit from working with peers from other disciplines. Students reported that they valued the opportunity "to work with students from different programs and learn from them" and found that "by collaborating with people from different backgrounds the class and [the] project [were] strengthened. Knowledge mobilization would not function so well without such a diverse set of people." We need a place in the university where interdisciplinary research, training, and service to the community can be coordinated and nurtured. Fortunately, the undergraduate course is currently secured in the Psychology Department.

Second, we need to develop employment capacity for students trained to serve the needs of society through knowledge mobilization. Students are often drawn to the university for programs and courses that promise good job prospects. But the creation of jobs relevant to systematic reviews requires that community organizations see the value of knowledge mobilization for their decisions. And they need the funding to create these positions.

Given the impossible strain on the budgets of community agencies from burgeoning demand for services, not only do community partners lack human resources to do their own knowledge mobilization but they even have to borrow from Peter to pay Paul when they assign staff to act as the liaison between the university and their agency. Community agencies believe wholeheartedly in the value of evidence-based practice, but often lack the resources to make this commitment a reality.

Our next step is to develop a method of estimating the economic benefits of connecting university research to social service. If successful, the findings may increase the demand for jobs in knowledge mobilization—demand that our students are well-prepared to meet. These students know that academic research matters to the policy and program decisions that affect the rest of society. We hope that our knowledge mobilization model becomes a key mechanism by which communities and universities pool their intelligence and resources to put social science and humanities research to enhanced use. AM

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