A collaborative interprofessional curriculum mapping initiative

Key Words:
Interprofessional, curriculum, mapping, collaboration, curriculum evaluation, accreditation

Abstract:
Professional programs in many disciplines require faculties and departments to engage in mapping for the purpose of managing curriculum change to meet accreditation standards. The purpose of this TLEF project is to develop an adaptable curriculum mapping system that can be tailored to professional faculties (e.g. pharmacy). The system will allow for characterization of programs based on content, outcomes, or delivery method frameworks. A pilot of mapping interprofessional education within the Faculty of Pharmacy and Pharmaceutical Sciences will serve as a basis for testing and refinement of the system for future use with other curriculum components and faculties. The project is innovative because it will improve each faculty's ability to map and monitor curriculum to improve overall education quality. In addition, this project will impact teaching in Pharmacy by informing about gaps in interprofessional education and will guide teaching and learning improvements for students.

Project / Research Description

Introduction

This TLEF project is designed to create an efficient curriculum mapping process by developing a flexible database system for use by most professional faculties. The system will be designed to produce reports describing curriculum based on content, outcome and delivery method frameworks that can be used to guide curriculum management to improve teaching and learning. The system will be tested with a priority curricular area for many accredited health science programs – interprofessional education (IPE). The Faculty of Pharmacy & Pharmaceutical Sciences (FPPS) is currently redesigning its program from a Bachelor of Science in Pharmacy to a new Doctor of Pharmacy entry-to-practice degree for 2017, providing the opportunity for engagement of Faculty and students. The project will afford the capability to provide direction on IPE activities occurring within the FPPS and the Health Sciences Education and Research Commons (HSERC). HSERC has the mandate to implement interdisciplinary education across the health sciences faculties. This requires a detailed understanding of what the individual faculties do in terms of IPE. Our pilot of mapping IPE in pharmacy will produce information HSERC can use in planning and serve as a basis to inform how all health science faculties engage in the process.

Background

Mapping

Professional programs in many disciplines now require faculties and departments to engage in mapping for the purpose of managing curriculum change to meet accreditation standards. Mapping is usually done based on content and outcome frameworks provided by accreditation bodies but can also be done based on program developed taxonomies as well as taxonomies of teaching methods. Mapping can also be done at different levels of analysis including course, session, or with individual program assessments. While these features can result in multiple mapping configurations, most mapping processes result in static snapshots of a program based on one type of taxonomy and one level of analysis. Given the increasing complexity and rapidly changing nature of most professional curricula, a more flexible user-friendly mapping system is needed. Further, while some faculties have been able to purchase costly mapping programs embedded in larger curriculum management systems that are sold as achieving flexibility goals, these are not always available to smaller faculties and require large teams of people to update and maintain. There are less expensive and even free systems available, these options tend to be inflexible and not very user friendly. A streamlined cost-effective mapping system that is responsive to faculty needs is needed to better service all faculties.

Interprofessional Education

Interprofessional education (IPE) occurs when students from □"two or more disciplines learn about, from and with each other to improve collaboration and the quality of care□" (CAIPE, 2002). IPE and collaborative practice is viewed as a strategy to address the current crisis in health workforce (WHO, 2010) and service delivery (CHSRF, 2006). In order to prepare a practice-ready health workforce, IPE is a key concept to be integrated into curriculum (Health Canada, 2008). Health professional programs are increasing their focus on IPE, as it has been integrated into accreditation requirements for many health science programs (AIPHE, 2010). IPE

learning activities can include students learning in the same classroom, engaging in active simulation activities, or peer teaching. Regardless of accreditation requirements, all graduates from the University benefit from integrated teaching that includes interactions with students from other programs.

Because of the mandatory nature of IPE, a description of the content, objectives, and assessments are required to ensure successful ongoing accreditation. This detailed documentation of IPE is challenging because of its smaller proportion of the overall curriculum. Additionally, when larger portions of curriculum are revised the downstream effect on smaller 'themes' or components, such as IPE, lose their place. These smaller components of curriculum are significant, but without awareness from mapping, poor decisions could result in losing these critical pieces for our students.

The World Health Organization's Framework for Action on Interprofessional Education and Collaborative Practice (WHO, 2010), identifies two mechanisms central to shaping IPE: 1) educator and 2) curricular. The *educator mechanism* involves training and preparing instructors (classroom and practice) for their roles in developing, delivering and evaluating IPE, and creating □'champions' within programs to promote IPE with their students and colleagues. The *curricular mechanism* involves utilizing principles of adult learning, contextual learning, linking learning activities, identifying outcomes and assessment of learning. Having a mechanism to identify competencies, learning objectives, teaching strategies and assessment approaches that cuts across programs will ensure a more robust and accurate documentation of IPE experiences.

At the University, the HSERC collaborates with the health sciences faculties to develop, implement and evaluate IPE activities. A comprehensive approach to mapping IPE curricula would enhance HSERC's ability to support the health science faculties with their IPE learning activities.

<u>Pharmacy Pilot</u>

The Faculty of Pharmacy & Pharmaceutical Sciences (FPPS) provides a unique opportunity to test the mapping system. Pharmacy education is undergoing significant change from an entry-to-practice B.Sc. degree to a Doctor of Pharmacy (Pharm.D.) degree by 2017. This shift is required to provide better prepared clinicians that can contribute to interprofessional health care teams. The primary change in the degree requires an extension of experiential activities (clerkships, rotations) including team-based interprofessional care. The IPE activities that take place throughout the curriculum will be increasingly important and require expansion in the PharmD program.

The FPPS has a strong history of IPE, with engagement with the pharmacy technician programs as a community partner. Students have also gone through peer teaching activities with other professional students, and have opportunities to take courses in teams with programs outside of health care (e.g. the Design course, partnering with computing science and industrial design students). The high fidelity simulations were also piloted in 2013 and are being scaled up to allow for IPE activities with nursing and other health sciences programs.

The FPPS is also a small faculty with 2 programs (undergraduate, graduate), and a highly structured didactic portion of the program. All courses are reviewed annually through the

Curriculum Committee. In 2014 the Director of Assessment and Chair of the Curriculum Committee developed a rudimentary database to allow for content mapping of the current B.Sc.Pharm. program. This simple system already allowed for report generation for curriculum development for the PharmD program. Taking this system and further developing and enhancing the capabilities would be a logical next step.

The structure, urgency, and experience with IPE allow for a natural fit with FPPS.

Collaboration

The proposed project supports collaboration across the health science faculties due to the role of HSERC and its existing connections with the health programs. HSERC is committed to ensuring that the interested health programs are involved in the further development and implementation of the mapping system to document IPE activities. Additionally, HSERC and FPPS work with other faculties (e.g. Arts, industrial design; Science; computing science) outside of the health sciences, which will be effective starting points to determine the needs (unique taxonomy, reports) required by other programs.

Methodology and Project evaluation

System Development

As an an initial step, the faculties across the health sciences will be consulted to determine their mapping needs and preferences. A currently used rudimentary FPPS system for mapping, first used in 2014 will serve as a basis for development along with information gleaned from a survey of currently available mapping software options. Of note, a means by which program specific taxonomies of content, outcomes and delivery method can be easily integrated into will be devised. The system will also be designed to allow faculties to identify and tailor the level of analysis to their needs.

Once built, the system will be used to map IPE in the FPPS. Both students and Faculty will be invited to engage with the mapping process by entering mapping information into the system and categorizing based on pharmacy content and outcome taxonomies.

After having entered mapping data into the system, IPE mapping reports will be generated to be provided to theFPPS curriculum committee and new development steering committee for interpretation and action.

Change with respect to IPE education will be measured by updating the mapping data after regular curriculum monitoring processes take place and requests for change have been acted on.

Evaluation

The goal of a mapping project is to improve faculties' ability to map curriculum based on specific needs and preferences. As such, success will be evaluated based on faculty reported improvement in the type of information provided from mapping as well as an evaluation of how new mapping information has been used to plan and make changes to curriculum. This will be an observational evaluation focusing on process change and functionality. In particular, the utility of IPE education mapping reports as rated by curriculum management faculty will be assessed

using open-ended self report questions. In addition a description of identified issues and plans for change that are derived from interpreting mapping data will be generated.

The project outputs will be a:

1. new electronic mapping system with implementation instructions
2. report describing how the system was used to map IPE in FPPS
3. report describing how faculty evaluate the use of the new system

Sustainability

The system will be designed to be readily accessible and to integrate with regular curriculum monitoring processes. The system will be designed to allow for real time updates and to be used within other faculties. Once established, the system will be designed to require minimal upkeep and maintenance, but would require dedicated commitment from an internal administrator or faculty member to ensure ongoing use. This support can be provided by HSERC.

Innovation

Developing a mapping system that can be used by any program demonstrates innovation and efficiency, while ensuring cost savings to the University in the long-term. An adaptable system that allows for functional and informative reports will support teaching and learning improvement processes.

Education is moving beyond discipline-specific courses, with a broader expectation for a graduate that is able to work effectively in complex and diverse settings. The use of IPE in undergraduate and graduate education prepares students for the marketplace. To be able to map and describe the progress of IPE across the University would be a tremendous asset to the university administration, HSERC, and individual programs.

Dissemination

Dissemination of the proposed project and outcomes will occur at two levels. First, HSERC will host sessions in order to share the curriculum mapping system as broadly as possible to support other programs to identify mapping needs and plan for curriculum and IPE evaluation within their program. Second, we will share the outcomes of the proposed project at local conferences (e.g. Dr. Olive Yonge Scholarship of Teaching annual event, Festival of Teaching), national and international professional conferences (e.g. Collaborating Across Borders Interprofessional Education Conference and Pharmacy educationconferences) and through publication of at least one manuscript (e.g. American Journal of Pharmacy Education or Journal of Interprofessional Care).

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