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Teaching health promotion: An innovative course for Pharm.D students based on project-learning

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Abstract

Teaching public health principles such as health promotion to healthcare professionals has gained attention in the last decade. The objective of this paper is to describe an innovative course that was developed in the Pharm.D programme in the Faculty of Pharmacy at the Université de Montréal with a focus on health promotion through community-based project learning. First, it describes the course which was structured in twelve learning units given in two semesters to first and second year students who were grouped in teams of eight to ten. Then, it describes the instructional and evaluation methods for the course, including the development of an application to perform two 360-degree assessments within each team. Finally, it gives an overview of the projects realised since the implementation of the course, as well as future development within the Pharm.D curriculum.

Keywords: *Active Learning, Project-based Learning, Health Promotion, Community Services, 360-degree Assessment*

Introduction

Teaching public health principles to health professionals has gained attention in the last two decades, driven by policy makers, and different guidelines and standards (Accreditation Council for Pharmacy Education [ACPE], 2015). For example, the Vision of Pharmacy Practice, adopted in 2013 by the Joint Commission of Pharmacy Practitioners, states that "Pharmacy education will prepare pharmacists to (...) promote health improvement, wellness and disease prevention" (Joint Commission of Pharmacy Practitioners, 2013). In pharmacy schools, this movement has led to different innovations to ensure that core competencies in health promotion and disease prevention are transmitted to future pharmacists (Crawford, 2005; Maffeo *et al*., 2009); Smith & Olin, 2010). Examples include educational activities oriented toward promoting wellness and disease prevention, such as diabetes (Woodard *et al*., 2016), asthma (Saini *et al*., 2011) and tobacco cessation (McBane *et al*., 2013). Moreover, different educational experiences involving interactions with vulnerable people and communities have been implemented (Offiong *et al*., 2011; Haddad *et al*., 2012). Until recently, both practice and teaching in pharmacy has focused primarily on disease prevention and health education, while staying away from health promotion, which encompasses community-based interventions to help people increase control over and improve their own health (Joyce *et al*., 2007; Agomo, 2012; Beshir & Hamzah, 2014; Nakamura *et al*., 2014). However, health promotion is not only about promoting healthy behaviours through educating people and expanding preventive clinical practices (Catford, 2011); it is also about giving people the means, resources, and hope that they will be able to have an impact on their own condition (WHO, 1986). It is about empowerment, which is defined by the World Health Organization as "a process through which people gain greater control over decisions and actions affecting their health" (WHO, 1998: p.6) (Wallerstein & Bernstein, 1994; Pulvirenti *et al*., 2014). This requires concrete involvement in a community, not only to inform and educate, but also to advocate for change to give new means and resources to vulnerable people. With this in mind, a new course was built in 2011 in the Faculty of Pharmacy at the Université de Montréal (Faculty) to integrate health promotion into pharmacists' education and practices. A general description of this course was published in French (David *et al*., 2017), as well as an analysis of team dynamics between students (David *et al*., 2016). The objective of this paper is to examine this innovative course with its focus on health promotion through community-based project learning. It will also describe the associated tools and practices that were required to implement this course.

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Description of course

This course, given in two consecutive semesters, was given simultaneously to first and second year pharmacy students (P1 & P2 respectively) working together in random teams of eight to ten students. One Faculty member, with expertise in sociology of health and medication use, was responsible for the course. Another Faculty member with a background in pharmacy practice shared responsibility for the course. They worked with a team of three to four mentors, who were pharmacists selected for their practical and research experience in the field of public health: they had either completed, or were in the process of completing, a Ph.D in public health or a related discipline. Mentors provided direct supervision for the teams, while the two Faculty members who shared responsibility for the course reviewed and discussed mentors' activities once a week, and on request.

This course was integrative, meaning that it was devised to consolidate knowledge acquired in other courses, and develop additional skills and competencies. Specifically, the objectives of the course were: 1) to consolidate the development of competencies; 2) to master problem-solving processes from a social perspective; 3) to develop open-mindedness to the situation of people from various socioeconomic backgrounds; 4) to develop critical thinking abilities; 5) to exercise leadership; and, 6) to collaborate with other professionals in the community. The course was organised in six learning units (LU), and associated deliverables (Table I). LUs 1 to 4 were conducted during Autumn, and LUs 5 and 6 were held during the Winter of the same academic year. Overall, each team had to develop and implement an intervention in collaboration with actors from the community, focusing on a health-related problem related to one general theme proposed for the year (Table II).

Table I: Learning Units, associated deliverables and other related activities*

LU†	Title	Deliverables	Grading	Number of words	Related activities‡
1	Knowing your team and exploring the theme	1 – Team Contract	5	400	Learning book (1h)
		2 –Specific Problem	7	200	Lecture (2h) – Scientific research and copyright
2	Understand the problem – elaborate a model	3 – Model of the Problem	25	2 500	Lecture (1h) - Analysing the problem Lecture (2h) – Conceptualise a health problem
3	Propose an intervention jointly with a community	4 – Potential Interventions	20	2 000	Lecture (2h)– Contacting community organisations Lecture (2h) – Classifying different types of Interventions
4	Elaborate the project	5 – Project plan	15	1 500	Lecture (2h)– Project management
5	Implement the project	6 – Material of the project	NA	NA	Realisation of the project
6	Present the project	7 – Abstract	5	150	Participation in the Colloquium
		8 – Intervention	35	NA	
		9 – Final report	30	3 000	
		10 – LogBook	15	Variable	
		11 – Poster	10	NA	
		12 – Poster Evaluation Bonus point : oral presentation to the Conference	NA	NA	

*All contents were in French
†Learning Units
‡Lectures were given to 1st year students only

Table II: Suggested health themes for academic year

Academic year	Theme	Number of projects implemented	Examples
2011-2012	Obesity	18	Organisation and diffusion of a petition on taxation of food with low nutritional value
	Stress	32	
2012-2013	Ageing	27	Loneliness and ageing : tools for health care professionals
	Sexual health	21	
2013-2014	Mental health	28	Elaboration and diffusion of a video on dependency on video games, presented to primary school students
	Handicap	11	
2014-2015	Social inequalities in health*	39	Analysis of safe cycling routes around schools to promote healthy behaviours
2015-2016	Urban health	13	Construction of a tool for capturing sound pollution related to airplane traffic
	Occupational health	27	

*Only one theme was suggested in 2014-2105, given the complexity of the theme.

In the first LU, teams had to elaborate a "team contract" using a standard model proposed by the Faculty members. Details on the responsibility of the members, frequency of meetings, team leaders, and consequences in terms of punctuality and other commitments were required. Then the team had to identify a specific problem related to a theme and describe the problem in terms of frequency, extent and consequences. Their mentor then validated the selected problem.

LU 2 was structured around building a model to present determinants for the problem. Conducting a literature review was the principal step at this point as well as consulting experts within the field. A two-hour course on basic research methods for literature review was given to P1 by library services. Students had to write a 2,500-word essay to summarise their findings and create a visual representation of the problem and its determinants. Moreover, they had to situate the position of stakeholders within the problem, from a local and national perspective. In the third LU, the scientific and grey literature was searched for interventions that were proposed or evaluated for this specific problem, and the local communities were explored for on-going or planned interventions and potential partners. Teams had to write an essay of 2,000 words to elaborate a classification of interventions according to an appropriate typology, and to propose an intervention that could be implemented for their specific problem. At this step, teams were also asked to consult with these potential partners to elaborate their project plan based on real concerns and priorities. The next step, LU 4, pertained to the planning of the intervention, based on the literature review, exploration of the community and emerging partnerships with local actors. Project management tools had to be used, such as a Gantt diagram with detailed planning of activities, resources, and follow-up processes. The deliverable associated with this step was the project plan (1,500 words). It also had to include tools for the evaluation of their intervention, such as an interview guide with partners and a survey of the participants. To be approved, the project had to require approximately 300 hours for its realisation, it had to be relevant to the community, and have the potential to create a tangible social impact.

Material construction and/or event planning was the next step (LU 5). Outside experts, such as professors or healthcare and public health professionals, were solicited by students for guidance on content creation and validation when required. All materials had to be revised by an expert, and approved by mentors before diffusion into the community. When the project included a presentation to the lay public, students had to be accompanied by a pharmacist mentor. Projects had to be implemented before April of the academic year. Throughout the year, all teams had to maintain a 'LogBook' of their activities, including dates of meetings, decisions and follow-ups. Entries had to be made at least once a week during the course period, and this was evaluated as part of the course.

A colloquium was organised at the end of the Winter semester. Teams had to prepare an abstract of their project, as well as a poster (part of LU 6, printing fees were paid by the Faculty). The Faculty members and mentors reviewed all projects, and the twelve best projects were selected for a seven-minute oral presentation at the end-of-year colloquium. Three prizes were awarded in the following categories: creativity, social impact, and scientific rigour. All Faculty members, partners and community stakeholders were invited to the colloquium. Participation in the poster session was mandatory for all students.

Instructional & Evaluation Methods

This course was based on project-based learning, with a strong relationship with the local community. This active learning method supports the engagement of students in their learning activities, and requires them to connect with real-life problems (Hameen-Anttila *et al*., 2010) (Farland *et al*., 2013). It has a strong expeditionary component, meaning students have to go outside the University, and experience contact with real-world situations and people. This is particularly suitable with the goals of health promotion as it contributes to the development of core competencies in leadership, critical thinking and professionalism (Mesquita *et al*., 2015).

Each team was supervised by one mentor, and had to meet regularly with their designated mentor (at least once a month) to stimulate and enrich the active learning processes. Ten hours of lectures were given to P1 students to consolidate knowledge transmitted through other courses, and give them tools and specific instructions on deliverables: modelling a health-related problem to include all levels of determinants (individual, community, socio-political), as well as creating partnerships in the community. Moreover, students were given an overview of scientific methods for literature searches, as well as a lecture on project management. All teams had to use an electronic file-sharing platform where all their documents had to be archived. Mentors were given access to the documents of their teams, and could regularly consult the LogBook and other files as needed to supervise the project.

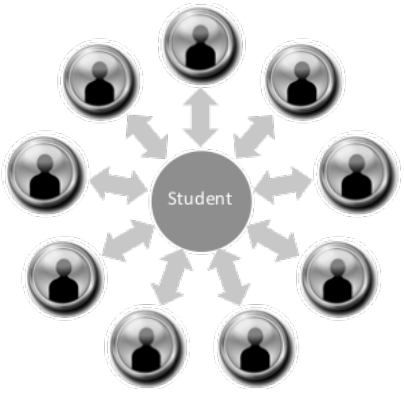
Evaluation of each deliverable or assignment, with the exception of the poster, was performed by mentors. A list of criteria was used, and each was assessed according to a qualitative log scale ranging from 0 to 5 (5 = 100%, 4 = 85%, 3= 70%, 2 = 60%, 1=40%, 0 = 0). Evaluation by each mentor was adjusted by cross-reviewing assignments from other mentors. For each assignment, one cohort was designated as "responsible", and the other was designated as "collaborator", and the grading was proportional according to this difference in responsibility: the contribution of the total grade of a given assignment was 0.6 for the "collaborator" vs 1 for the "responsible" cohort. The teaching team (two Faculty members and three to four mentors) evaluated the overall project at the end of the winter semester according to three main criteria: scientific rigour; impact within the community; and creativity. At the colloquium, posters

were evaluated by Faculty members and other experts, including a quick oral presentation of the poster by the students. Moreover, each student had to evaluate two or three posters by other teams. Oral presentations of the twelve best projects, as selected by the teaching team, were rewarded with bonus points (maximum 5 points out of 200).

Students self-evaluation and team evaluation

Peer-reviewed evaluation of teamwork was performed once at the end of the Autumn semester, and once at the end of the Winter semester. A "360-degree" assessment, or multi-source feedback, was adapted to our context of team-work (Davidson, 2007). Every student had to be evaluated by all of their teammates, and also had to auto-evaluate themselves (Figure 1). A web-based application was designed to conduct this complex 360-degree evaluation of 40 teams of eight to ten students each. Figure 2 and Figure 3 give an overview of the students' and the teachers' interfaces, respectively. The results of each 360-degree assessment were reviewed by a Faculty member to identify problematic cases.

Figure 1: Schematic representation of the 360-degree assessment



Evaluation by faculty team members

This course was implemented in 2011, with 176 projects conducted since this date on nine different themes (Table III). Students successfully reached out to key community stakeholders, and built partnerships with different types of organisations. They were diverse, including political parties, healthcare organisations (*e.g.* hospitals, primary care centres), high schools, primary schools and kindergartens, community organisations (*e.g.* COQSida, l'Assemblée populaire Autonome d'Hochelaga Maisonneuve, la Maison du père), and patient associations (*e.g.* le Regroupement pour la trisomie 21). Projects were realised primarily around vulnerable people or key stakeholders. Different types of interventions were realised in close collaboration with these partners. Examples include organisation of events (*e.g.* collective cooking, food distribution, debates with key stakeholders), elaboration of material for education and raising awareness (*e.g.* video on dependency on video games presented to primary school students https://www.youtube.com/watch?v=xokUyXBqepE) (Table II).

Figure 2: Screenshots of the student interface for the 360-degree assessment. *Every student evaluated themselves as well as team members (8-10) by clicking on the appropriate box. One evaluation has to be completed for every team member + individual*

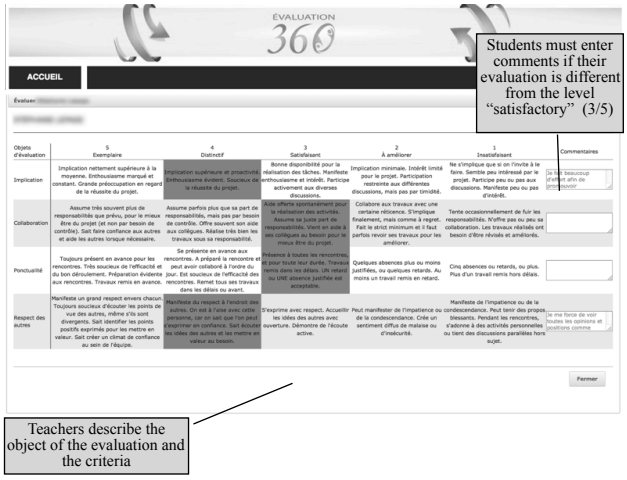


Figure 3: Teacher interface screen shots. *The results for one student were easily accessible, as well as all evaluations performed by this student.*

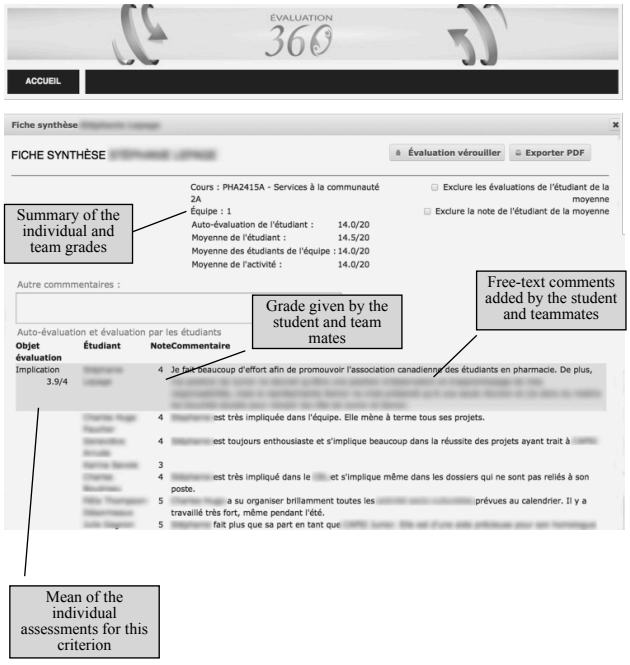


Table III: Evaluation methods and grading per cohort

Evaluation methods	P1*	P2†
Assignment (Deliverables)	130/200	155/200
Exam	25/200	NA
360 evaluation Autumn	20	20
360 evaluation Winter	25	25

*P1: First year pharmacy students
†P2: Second year pharmacy students

Future Plans

After assessing the experience of students with focus groups at the end of each semester since its inception, it was decided that starting in the Autumn 2016, only first year students would be attending this course. Indeed, having to repeat the course in the second year of the students' curriculum was deemed too repetitive. Consequently, future teams will be made up of only first year students, keeping the process and content of the course similar. However, course credits will be increased from three to five, to better reflect the number of hours required to successfully implement a project in the community setting. For second year students, a new course is under construction to keep this focus on health promotion principles, using a different approach.

Conclusion

This course effectively integrated health promotion principles into the pharmacy academic curriculum by allowing students to develop core competencies that will serve them in their professional future. While it required a substantial contribution of resources from the Faculty, it was also an opportunity to build collaborative bridges with partners in multiple sectors that were not traditionally connected to the Faculty. Their experience seemed overall to be a positive one, and many wished to keep this collaboration alive in the future.

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