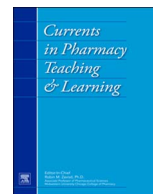




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Experiences in Teaching and Learning

Entrepreneurship skills development through project-based activity in Bachelor of Pharmacy program

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ABSTRACT

Background and purpose: To provide pharmacy students with an opportunity to develop entrepreneurial thinking and skills.

Educational activity: A business proposal building project-based activity was integrated into a two-credit hour pharmacy management course during the eighth semester of the bachelor of pharmacy degree program. The student groups submitted their proposals, mimicking the process of submitting business proposals and obtaining approval in the real world. Essential management tasks including operation procedures, location and layout design, inventory management, personnel management, marketing management, and finance management were taught step-by-step so that students could work on a similar scenario with their proposal building. Students' career preferences were also measured at the beginning and end of the course. Course was assessed by written exffigam and rubric based project evaluation. Student feedbacks of the project were collected using a five-point Likert scale.

Findings: The project-based activity was well integrated in the course. The project helped the students (n = 72) to understand management concepts more clearly, which was reflected by their significantly higher ($p < 0.01$) grades compared to previous year. Students' feedback was overwhelmingly positive (mean score of 4.53 on the scale of 5). Students developed both interest and confidence to start a pharmacy as a result of this activity.

Summary: The project was successfully designed and executed in a pharmacy management course within a bachelor of pharmacy curriculum. Based on the response received in this project, efforts will be made to provide guidance and support to the students by calling field experts such as pharmacy owners and financiers.

Background and purpose

Entrepreneurial skills that entrepreneurs effectively exhibit are “decision-making, strategic thinking, risk taking, confidence building, communicating ideas, motivating team members, tolerance of ambiguity,” and taking responsibility for actions.^{1–4} Therefore, entrepreneurship education is essential not only to shape the mindsets of young people but also to create opportunity, ensure social justice, instill confidence and to stimulate the economy. However, entrepreneurship skills are not commonly listed among a pharmacist's skill set and only recently have been identified by various pharmacy educational bodies as a critical skill.⁵ For example, Key Element 4.3 of Accreditation Council for Pharmacy Education (ACPE) Standards 2016 focuses on innovation and entrepreneurship.⁶ In addition, Education and Training 2020 from the European Commission lists enhancing creativity and innovation, including entrepreneurship, at all levels of education as its fourth long-term strategic goal.^{7,8} In 2011, the American Society of Consultant Pharmacists (ASCP) Foundation awarded grants to three entrepreneurs to “...establish a fee-for-service component of

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their senior care pharmacy practices in the community”.⁹

Some pharmacy schools have started a stand-alone program for entrepreneurship development. For example, University College London (UCL) School of Pharmacy is offering Master of Science (MSc) degree in Pharmaceutical Formulation and Entrepreneurship in which students learn about developing and assessing new business concepts, raising capital, and marketing their business.¹⁰ The University of South Florida and University of Georgia offer graduate certificate programs in Pharmacy Entrepreneurship, Leadership and Management, and a Professional Certificate in Pharmacy Entrepreneurship, respectively.^{11,12} Drake University has launched the Drake Entrepreneurial Leadership Tools for Advancement (DELTA) Rx Institute to promote entrepreneurial spirit in pharmacy.¹³ However, as of the date of writing this article, no reference was found to incorporate an entrepreneurial competency in undergraduate or graduate pharmacy degree programs.

Dubai Pharmacy College (DPC) is the first pharmacy college in the United Arab Emirates (UAE) exclusively dedicated to educating aspiring female students in the field of pharmacy sciences. As part of the curriculum, a two-credit hour pharmacy management course is offered in the eighth semester of the Bachelor of Pharmacy program. The aim of this course is to provide the students with the principles of management related to pharmacy practice. During this course, students were exposed to various management principles, which enable them to manage a pharmacy efficiently. The aim of this study was to design, implement, and evaluate a project-based activity in the pharmacy management course for developing a proposal to start a pharmacy and promoting entrepreneurial thinking among the students.

Educational activity and setting

Up to the 2013–14 academic year, the pharmacy management course was offered in a traditional way in which knowledge was imparted through a didactic lecture with written exam assessment. In the 2014–15 year, active learning was integrated into the course to enhance students' entrepreneurial thinking. The teaching method was approved by both Program Review and Assessment Committee and Research and Ethical Committee of DPC. The old and new course structures, along with teaching methods and assessment tools, are given in Table 1. The new structure of the course was well-suited for proposal building. There were 72 students enrolled in the course. At the beginning of the course, a “strengths, weaknesses, opportunities, and threats” (SWOT) analysis exercise was given to the students in the class to determine the feasibility of starting a new business in pharmacy settings. SWOT analysis is a basic and candid model used to assess the strengths, weaknesses, opportunities and threats involved either for an existing business or for a new venture.¹⁴ SWOT analysis determines what is needed by a firm to accomplish its objectives and achieve the desired results.¹⁵ Students were divided into smaller self-selected groups of four to six students to work on the project for developing a proposal to start a pharmacy. Each student group was asked to submit their project proposal and to make student project proposal presentations at the end of the course. Project-based learning (PBL) is a dynamic, active learning approach that engaged the students in exploring real-world problems and challenges, while simultaneously developing cross-curriculum skills by working in small collaborative groups.¹⁶ PBL is not a new idea in education; however, during the last two decades, it has evolved and been formally defined as a teaching strategy. PBL is an engaging strategy that puts students in an active learning role such as problem solver, decision maker, investigator, or documentarian. The benefits of PBL include improvement in student attendance, growth in self-

Table 1
Old and new format of pharmaceutical management course delivery.

Course format	Learning outcomes	Teaching methods [Hours spent]	Assessment tools
Old Format [Traditional Method]	LO1- Identify the steps required in opening and designing drug store. LO2- Describe the key concepts of inventory control and purchasing in keeping and maintaining right quality and quantity of medicines in pharmacy. LO3- Illustrate principles of personnel management including their selection, retention and termination in pharmacy. LO4- Explain different concepts involved in pharmaceutical marketing such as channels of distribution, sales promotion and sales forecasting. LO5- Outline basic accountancy principles and financial statements required in pharmacy.	Traditional Lecture using power point as didactic class [30 h]	Written Exam [100%]
New Format [Active Learning]	LO1 – Identify and explain key management concepts of material management, personnel management, finance management and marketing management as applied to community pharmacy practice. LO2- Apply learned principles of management in developing project proposal for starting and managing their own community pharmacy as a team. LO3- Prepare and present project proposal at professional level.	Traditional Lecture using power point in didactic class [15 h] SWOT analysis for individual student [1 h] Project work for group of 4–6 students [24 h] Proposal writing and presentation [6 h]	Written Exam [50%] Not assessed Project proposal and students' presentation [40%] written and oral communication skills [10%]

SWOT = Strengths, weaknesses, opportunities, threats.

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