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PROGRAMME DESCRIPTION

Experiential learning and community engagement in fostering social entrepreneurship among pharmacy undergraduates

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Abstract

Background: Entrepreneurship is an increasingly indispensable element of higher education due to its potential application in providing sustainable solutions to various social issues. Delivering entrepreneurship education to university students with diverse backgrounds and not just business students require innovative and integrative approaches. Given the lack of social elements in the current entrepreneurship education for pharmacy students, introducing a social entrepreneurship module might be beneficial. The objective of the present study is to develop and evaluate a new module for teaching social entrepreneurial skills to pharmacy students. **Methods:** This report describes the conception and implementation of an experiential learning module as a student-led community project within the Bachelor of Pharmacy programme at the Faculty of Pharmacy, Kuala Lumpur Campus, Universiti Kebangsaan Malaysia. The effectiveness of the one-semester module was analysed via students' reflection essays on their experiences of participating in the project, and thematic data was coded and summarised. **Results:** Most students reported gaining organisational and interpersonal skills such as effective communication and teamwork. Notably, some students also developed entrepreneurial skills and social awareness. **Conclusion:** The outcomes of this study showed that the entrepreneurship module was effective and well received by pharmacy students and may be replicated for effective teaching of entrepreneurship at other universities.

Introduction

Entrepreneurship education is a vital component in contemporary academic curricula even for non-business students, as the benefits of building entrepreneurial mindsets and traits are deemed useful for graduates' survival (Boyles, 2012). Current definitions of entrepreneurship encompass a spectrum of actions, including opportunity identification or creation, and value creation on top of business creation and innovation (Prince *et al.,* 2021). In academic settings, these definitions have been seen as a drive to produce more competitive graduates with entrepreneurial traits to fulfil the demands of the current economic climate.

Across countries, governments have published guidelines and blueprints to call for more extensive integration of entrepreneurship into higher education curricula (QAA, 2018; Ministry of Higher Education Malaysia, 2021). Malaysia has made significant strides in advancing entrepreneurship education, particularly through the Ministry of Higher Education's Entrepreneurship Action Plan for Higher Education Institutions 2021–2025 (EAP-HEIs 2021–2025), which builds on the Malaysia Education Blueprint 2015–2025 and the National Entrepreneurship Policy 2030. In these efforts, emphasis is given to fostering a culture of

innovation and opportunity-based entrepreneurship among students. In line with these national strategies, Malaysian pharmacy students actively engage in a range of entrepreneurship initiatives. For example, the annual Young Entrepreneur Program (YEP), organised by the Malaysian Pharmacy Students' Association (MyPSA), exposes pharmacy students to entrepreneurship fundamentals through webinars, workshops, and business pitch competitions, allowing them to interact with experienced pharmapreneurs and develop entrepreneurial skills relevant to the pharmacy profession. In parallel, the Malaysian pharmacy curriculum provided space for these components as the programme standards explicitly state that elective modules must be incorporated to provide students with diversity and opportunities for broadening their academic and personal development, while ensuring a balanced allocation of time and credits between core and elective courses.

Entrepreneurship courses in most pharmacy curricula focus on the business aspects of managing and operating a community pharmacy (Shahiwala, 2017; Afeli & Adunlin, 2022). While this is vital for private pharmacy practices, the benefits of acquiring entrepreneurial skills extend beyond running a pharmacy. Innovation and strategic thinking are also useful to the delivery of effective healthcare services in community and clinical settings, including medication dispensing, medication adherence reviews, and management of minor ailments (Martin, 2011; Laverty et al., 2015). It has also been pointed out that instilling a sense of social responsibility, a desired quality in pharmacists, is lacking from the accreditation standards for pharmacy education (Mattingly *et al.,* 2019a; Mattingly *et al.,* 2019b), which might be given different priorities in pharmacy curricula across countries.

The continual development of the umbrella concept of 'entrepreneurship' has led to the distillation of entrepreneurial characteristics into sub-specialties. Of particular interest to this work is social entrepreneurship (SE), which has been popularised as a sustainable solution for both social and economic issues. Its value is aptly encapsulated in one of its definitions, i.e. 'entrepreneurial activity undertaken for a social purpose, changing the way that social needs are addressed' (Luke & Chu, 2013). Being a complex subject, SE requires a mix of didactic and non-didactic methods, including experiential learning.

Experiential learning

Active, innovative, experiential, and outside-of-classroom learning is a well-established method for improving the achievement of learning outcomes (Kolb, 1984) and students' acquisition of 21st century skills (Pamungkas *et al.*, 2020). The learning-by-doing or experiential, project-based approach is deemed more effective for entrepreneurial education than writing business plans, as it involves many aspects such as social interactions, cognitive and affective skills, and emotional intelligence (Chang *et al.*, 2014; Gibb, 2002; Rae & Carswell, 2013). In addition, experiential learning has also been shown to enhance non-entrepreneurial, non-technical skills such as professional awareness, teamwork, and communication skills in healthcare professionals (Hodza-Beganovic *et al.*, 2021).

Given their effectiveness, experiential learning methods have been used to enhance entrepreneurship education among pharmacy students. However, these have been mostly limited to attachments and competency training in community pharmacy practices (Dy-Boarman & Ulrich, 2022; McCartney & Boschmans, 2018; Singh *et al.*, 2020). The curriculum of the pharmacy programme offered by Universiti Kebangsaan Malaysia incorporates a similar approach, requiring students to undertake short-term attachments at retail or community pharmacies. Other reported innovations in experiential entrepreneurial training include gamified simulations that provide students with a realistic virtual experience of running a pharmacy (Hope *et al.*, 2021). Some pharmacy schools provide entrepreneurial training through Shark Tank-like activities, tasking students with brainstorming and pitching business ideas to solve problems through innovative pharmacy services (Mogul *et al.*, 2020; Nguyen *et al.*, 2022). Others use experiential learning to enhance non-business entrepreneurial competencies among pharmacy students, such as solving problems in patient case studies and drug prescriptions (Refai & Klapper, 2016).

The approaches discussed above may have been successful in achieving learning objectives such as creativity, problem-solving, and entrepreneurial skill application, potentially assessed via skill-based rubrics, peer and instructor feedback, or pre- and post-intervention surveys. However, such success may not be replicated within a different educational context and with an altered set of learning objectives, i.e. teaching entrepreneurship with social elements (SE) to pharmacy students. This niche has been scarcely explored. One study pertains somewhat to SE in pharmacy, requiring students to pitch innovations that address the importance of self-care needs during the early phase of the COVID-19 pandemic; however, there was no direct interaction with society (Nguyen *et al.*, 2022). Real-life engagement and social interactions are essential to increase learning productivity and knowledge construction among university students,

which aligns with the social constructivism pedagogy (Hussain, 2012; Omodan, 2022).

Learning through social constructivism (Kay & Kibble, 2016) requires that students, the learners, actively engage in human-based activities and create meaning through interpersonal interactions and experiences. Such enhanced human connections are part of patient care that pharmacy students are expected to learn and appreciate. Additionally, it is believed that students' intrapersonal learning can be enhanced by interpersonal experiences (Subban, 2006); and this has been shown to be effective and productive for classroom settings (Hussain, 2012; Kay & Kibble, 2016; Omodan, 2022). Social-based learning, especially when conducted in the students' social and cultural contexts, is also deemed beneficial in that it fosters empathy in students (Hirshfield & Underman, 2017; Mukhalalati & Taylor, 2019), a trait that is much required by the healthcare profession.

Summary

A new SE module has been developed and incorporated as an elective credit course for pharmacy students at the Faculty of Pharmacy, Universiti Kebangsaan Malaysia, and evaluated for its effectiveness. To the best of the authors' knowledge, no specific SE modules have been reported for pharmacy curricula. In Malaysia, the Pharmacy Board has listed entrepreneurship as a mandatory element of a standard pharmacy curriculum. The SE offshoot of entrepreneurship, unconstrained by profit-centric goals, has under-tapped potential for providing solutions to complex healthcare challenges. This has led to its being the focus of this work.

In addition, incorporating social elements can render experiential learning more effective in fostering entrepreneurial skills and mindsets, as successful entrepreneurship education requires active processes which work beyond individual cognitive abilities. Involving students in SE projects may address the current gap in pharmacy education, helping students in developing a strong sense of social responsibility while gaining entrepreneurial competencies. Since SE focuses on finding sustainable solutions to specific community issues through entrepreneurial approaches, adopting SE modules in pharmacy curricula may be a powerful tool to enhance future-readiness in pharmacy graduates, empowering them to serve pharmaceutical care needs innovatively.

The effectiveness of the new SE module was assessed based on students' reflective essays. The course learning outcomes were set to measure their ability to plan and organise a fundraising activity serving a local community in need. Also, through participation in the project, they should develop an enhanced sense of empathy and social responsibility.

Description of course design

The module was implemented in the Bachelor of Pharmacy curriculum as a faculty-run elective course, coded and named NFNF1522 Organisational Skills and Community Service in Pharmacy, at the Kuala Lumpur campus of Universiti Kebangsaan Malaysia. NFNF1522 was one of the several electives, project-based courses designed to equip pharmacy students with the necessary soft skills for navigating through the progressively complex four-year curriculum. It is a two-credit unit course which is equivalent to a total learning time of 80 hours. This project-based course allows high flexibility of the students' time management with minimal hours of fixed classes, for example the introductory concept lectures and presentation workshops. After completing the course, the students were expected to be able to: i) Explain the concepts of organisational work and event management, ii) Prepare a plan for a fundraising event as part of social service to help a group of needy people, iii) Conduct a fundraising event as part of social service to help a group of needy people. A total of 48 first-year students from the 2018/2019 cohort enrolled on the course and organised an SE-related project over the span of one academic semester, i.e. 15 weeks, where the weekly commitments vary at different stages of the project (approximately two to eight hours per week). Five lecturers served as facilitators, assisting with project conception, guiding students' engagements with community participants, teaching the basics of entrepreneurship, monitoring progress, and ensuring the project plans were executed accordingly. The supervision workload was counted as part of the lecturers' teaching workload for the particular semester, which was manageable as the lecturers were delegated to monitor and assist different aspects of the project.

At the beginning of the semester, the students attended lectures and were given study materials on the concepts of organisational work and SE. Then, they were briefed on the SE-related issues that they were expected to tackle through the project and were tasked with presenting an action plan in a prespecified format. At this point, they had already formed subcommittees managing different aspects of the project. Throughout the semester, the lecturers requested periodic updates from the students via emails and WhatsApp messages and helped them to troubleshoot any problems they encountered.

The SE-based project was called 'Gema Amal Insan (GAIn)', which translates literally into 'Echoes of Human Charity' in English. Its aim was to help a rural community in Hulu Langat, Selangor, Malaysia in generating additional sources of income by selling dishwashing soaps made from recycled cooking oil. During conception of the project, several product options were considered and discussed. The choice was made based on the relevance of the skills that the students were expected to gain from the process of formulating, manufacturing, and selling the eco-friendly soaps, which mirrors the bench-to-bedside pathway that drug development typically undertakes. The execution of the project began with organising a training workshop for making the recycled oil-based soap, where an external expert trainer was invited. The community participants were guided hands-on of the step-by-step process, with the students being the facilitators.

Resources

The project was carried out in collaboration with a local association called 'Persatuan e-Skil Wanita' (Women's e-Skills Association) whose main focus is on empowerment of women in the Hulu Langat district. The association provided capital funding for purchasing necessary equipment, carrying out training workshops for the participants, and producing soaps for selling. The profits obtained from selling the soaps were all given to the association who then distributed them among the community participants.

Course assessments

There were no examination-based assessments for this course. Instead, a variety of methods were used to continually evaluate the students' progress and performance, eventually resulting in a letter grade ranging from E (lowest) to A (highest). The course assessments consisted of reflective essays (10%), peer evaluation (5%), individual report of project-specific tasks alongside personal evaluation by lecturers (45%), presentation of initial project plans (15%), and final (post-mortem) presentations (25%). The detailed criteria of assessment for each component are described in Table I. The 'unspecified' tasks would vary from project to project; for the cohort of students described in this report, the assignment was to sell a targeted number of products.

Table I: Description of assessment details

Assessment type	Weightage (%)	Assessment criteria
Oral presentation of project planning **(group)** ● The grouping was based on specific subcommittees or excos.	15	● Demonstrate the ability to plan the work in an organised manner ● Demonstrate thoroughness in the presented work plan ● Demonstrate the ability to divide tasks fairly between the group members ● Neat presentation format, and use of appropriate language
Oral presentation of project post-mortem **(group)** ● The grouping was based on specific subcommittees or excos .	25	● Demonstrate the ability to execute tasks according to plan in an organised manner ● Demonstrate thoroughness and high quality of work ● Demonstrate critical thinking and problem-solving skills in performing tasks ● Neat presentation format, use of appropriate language
Lecturers' evaluation on tasks performance **(individual)** ● The interview was carried out in groups of three students with two lecturers as interviewers. ● The report was submitted in written form.	45	● Demonstrate commitment by attending on-site activities and contributing significantly to the preparation ● Interview: - Show concern for the social problems that should be addressed through the project - Demonstrate empathy for the problems and challenges faced by the community - Show individual initiative or willingness to be involved in the project - Use of appropriate language ● Individual reports with evidence such as photos provided for the following: - Proactive individual contribution - Involvement in teamwork - Engagement with the community - Neatness of report format
Peer evaluation **(individual)**	5	● Able to carry out assigned tasks independently ● Able to work well with peers

Assessment type	Weightage (%)	Assessment criteria
● Each group member was required to evaluate the other members in the same subcommittee		● Able to accept opinions and criticisms from peers ● Able to perform assigned tasks conscientiously and complete them on time ● Show a high level of awareness and interest in helping the community
Reflective essay **(individual)** ● The essay was submitted in written form.	10	● Demonstrate critical thinking in reflecting on the following: (1) Enhancement of knowledge and/or skills; (2) How their experiences have helped drive their self-development; (3) Opportunities for improvements. ● Good organisation of ideas & appropriate language style

Reflective writing was chosen as one of the assessment tools as it has been shown to be effective for gauging the efficacy of experiential learning (Bennion *et al.,* 2020). The students were asked to cover the following in their reflective essays: (1) Specific skills or areas of knowledge acquired or enhanced; (2) Positive and negative aspects of their experiences, and how these drove self-development; (3) Suggestions for how they could have performed their tasks better. The instructions were written in a rather neutral manner to avoid causing biases in how the students perceived their experiences.

Analysis of reflective essays

This paper reports on the evaluation of the course effectiveness based on students' reflection. The analysis was done as part of the curriculum continuous improvement process, as approved by the faculty. Ethical approval to assess the effectiveness of this module was obtained from the Universiti Kebangsaan Malaysia Research Ethics Committee. Students' feedback was extracted from the reflective essays, which were submitted in digital files via UKMFolio (the university's online learning management platform). Some of the reflection essays were written in Malay. Therefore, many of the quotes that appear in the results section are translations by Author 1 that were checked and verified by Author 6, who is a native Malay speaker.

Reflective thematic analysis, combined with a content analysis approach using categorisation, was conducted to identify dominant themes within the reflective essays by organising data into predefined categories and uncovering commonalities and differences in students' experiences (Lindgren *et al.,* 2020; Braun & Clarke, 2021). The primary analysis was conducted by all authors who were also involved as facilitators. Author 3 acted as an external expert and validated the thematic analysis independently.

Before the data were extracted and coded, the reflective essays were de-identified and assigned unique identifiers that masked students' identities from the researchers. Each reflective essay was analysed by two researchers independently.

All responses were coded line by line, categorised, and listed accordingly into defined themes. The self-reflection essays were reviewed with continuous reflexivity and self-scrutiny. Meetings were held to discuss the coding scheme, and through argumentative validation, the data were examined from a contradictory viewpoint, the codes were compared, and differences of opinions were deliberated and resolved, so that a consensus on a coding tree was reached, and the themes most relevant to students' learning experiences were identified. Finally, the text fragments were sorted and analysed according to the identified themes, and a consensus was established. Repetitive themes were identified, and the findings subsequently condensed. The reliability of the study was ensured by the researchers' conduct and maintaining good records of the reflective writings and observations through documenting processes in detail.

Results

Evaluation

Overall, the feedback in the form of reflective essays suggests that the course was well-received by the students. It appeared to have a variety of dominant (sub)themes (Table II) with substantial overlap; so, the related (sub)themes were grouped to facilitate reviews of the reflective essays. Ranked by the frequencies with which they appeared in the reflection essays, the important (sub)themes are "*communication or social skills (and related suggestions)*" (n=46), "*teamwork (and related suggestions)*" (n=39), "*feeling or affective traits*" (n=32), "*problem-solving skills*" (n=28), "*programme improvements*" (n=25), "*entrepreneurship*" (n=22), "*technical skills or knowledge*" (n=22), "*positive experience*" (n=19), "*leadership (and related suggestions)*" (n=19), "*social empathy or awareness*" (n=16), "*self-confidence*" (n=12), and "*time-management*" (n=5).

Table II: Common themes identified in the self-reflection essays

Major theme	Subtheme	Count
Interpersonal skills	Communication or social skills	40
	Self-confidence	12
Enterprise-based skills	-	22
Technical skills or knowledge	-	22
Intrapersonal skills	Feeling or affective traits	32
	Social empathy or awareness	16
Organisational skills	Teamwork	21
	Time-management	5
	Problem-solving skills	28
	Leadership	8
Suggestions for improvement	Leadership	11
	Communication	6
	Teamwork and organisation	18
Positive experience	-	19
Programme improvements	-	25

Interpersonal skills

Many of the students remarked that participating in the project honed their interpersonal skills, enabling them to collaborate with their peers or people working for an outside organisation. The attendant increase in their self-confidence helped them to overcome the fear they typically experienced when interacting with people they had just met.

> *"[Working on the project] improved the way I communicated with the other members of the committee, the public, and professional employees." [Report 48]*

> *"I can now communicate better with friends, superiors, and people outside the university." [Report 16]*

> *"I was more confident when interacting with my peers, and I was able to get my opinions across in discussions among the committee members." [Report 41]*

Leadership and teamwork

Effective leadership is key to reconciling the inevitable clashes of views between members of the organising committee. Many of the students appreciated the importance of teamwork and good leadership.

> "I *have learned that teamwork is very essential in organising a programme." [Report 37]*

> *"I can also apply leadership values in myself so that I can create a project and use a variety of approaches to make sure the project aims are achieved." [Report 39]*

Teamwork and organisation

Some students went further and suggested that precise directions from the steering committee are essential. The steering committee should function as the coordinator between subcommittees and the *'manager'* ensuring that issues pertaining to division of labour did not arise or adversely affect team dynamics.

> *"The committee members should have been adequately briefed before they started on their assigned tasks. Only with a good understanding of the project would the committee members be willing to contribute effort and benefit from it [the project] as a result." [Report 5]*

> *"My suggestion for the next project is to improve the communication between the main committee, the subcommittees, and outside organisations." [Report 11]*

> *"The number of members in a subcommittee should be determined according to the workload so that all the members are able to play their part." [Report 40]*

Problem-solving skills

Aside from the occasional disagreements over workload distribution, the students also encountered other challenges that required them to exercise their problem-solving skills.

> "I *have improved my problem-solving skills through this project." [Report 3]*

> *"I asked my seniors and checked social networking sites to get ideas for generating income for the project." [Report 15]*

> *"[After having been rejected by several potential sponsors] we were asked to find companies whose portfolios were relevant to our project such as soap bottle suppliers." [Report 38]*

> *"I also did a lot of online researches [sic] on the effective marketing strategies." [Report 42].*

Time management, technical skills or knowledge

The students had a hectic study timetable and had to juggle responsibilities entailed by the project and other

courses. They were also required to complete tasks that demanded specific technical skills not normally taught to pharmacy students. So, overall, they acquired an assortment of skills that they would not have learned otherwise and that may benefit their careers in the future.

> *"One of the skills I have acquired is managing my time wisely." [Report 6]*
>
> *"I have learned the method to make liquid soaps from recycled cooking oil." [Report 25]*
>
> *"I have learned how to use Adobe Photoshop to create my own designs." [Report 16].*

Intrapersonal skills

Many students indicated that they enjoyed learning within the environment created by the project, which introduced stimulating new concepts and nurtured in them a strong sense of social responsibility.

> *"I was grateful I was given the opportunity to take part in the programme." [Report 8]*
>
> *"[The project] It has opened my mind to the hardships experienced by underprivileged communities and how important our role as members of society is to help them improve their livelihoods." [Report 45]*
>
> *"I have become aware of the importance of environmental conservation and that improper disposal of cooking oil is one of the contributors to environmental pollution." [Report 25]*
>
> *"There are countless values that I had benefited from this program throughout its execution." [Report 17].*

Entrepreneurship

Buoyed by the new-found confidence in their entrepreneurial skills, some students expressed intentions of starting a business in the future.

> *"The entrepreneurial skills I learned from the workshop would be useful if I plan to become an entrepreneur in the future." [Report 33]*
>
> *"This programme also helps me in the future when I want to open pharmacy community [sic] because I have got many [sic] new knowledge especially about entrepreneurship." [Report 3]*

Discussion

This report details the development of a course that creates a field-based environment for first-year pharmacy students to learn and grasp the concept of entrepreneurship through authentic experiences. Reflective essays submitted by students revealed that they learned a range of soft skills such as teamwork, effective communication and problem-solving skills that are applicable in various settings, especially where entrepreneurial competency is pertinent. This is in keeping with the course learning outcomes, which pertain mainly to SE, empathy, and social responsibility. As the main drivers of the project, the students helped selected community participants in manufacturing, marketing, and selling soaps made from recycled cooking oil. The product represented the four major SE themes, i.e. innovation, social impact, financial sustainability, and scaling (Kickul *et al.,* 2018). The first two themes are especially relevant to the pharmacy profession, where practice innovations and social awareness should empower pharmacists to better serve their healthcare roles (Mwawaka *et al.,* 2023) and provide compassionate patient care (Yu *et al.,* 2022). Through their participation, the students should be able to appreciate the following:

1. Innovation – This is evident in the amount of creativity that went into the formulation of the dishwashing soap. For instance, a major problem the students had to tackle was the unpleasant oily odour of the soap. They masked the odour by adding essential oils to the soap-making recipe.
2. Social impact – By learning requisite entrepreneurial skills, the local community was empowered to thrive economically.
3. Financial sustainability – The project is not merely a charity, which would be unsustainable, as shrewdly pointed out by Greg Dees, the pioneer of SE (Worsham, 2012). Instead, members of the selected community were provided with the means to build and run a small-scale business, using the proceeds from the initial students' sales. With their newly learned skills, they would then be able to generate additional funds to sustain the business.
4. Scaling – The same skill sets can be taught to other communities (scaling wide); or the soap products can be diversified to sustain the growth of the business (scaling deep).

Notably, potential 'pharmapreneurs' have been identified among the students based on their expressed intention of venturing into businesses in the future. This suggests that this course may be an effective format for training entrepreneurs-to-be. Surely, one may counter that entrepreneurial intention is, at best,

a surrogate measure of the efficacy of entrepreneurship education; and that the ideal yardstick of success would be the number of businesses actually established. But this is an impractical endpoint for university courses, given the longtime lapse between course completion and commencement of businesses. Another important theme that emerged from the reflective essays was the sense of moral obligation some students felt towards disadvantaged communities, which may motivate them to become social entrepreneurs in the future.

Several previous surveys have examined the factors that influence the formation of (social) entrepreneurial intentions (Giacomin *et al.,* 2011; Kirby & Ibrahim, 2011; Salamzadeh *et al.,* 2013; Shahverdi *et al.,* 2018). The frequently cited contributors were competency (relevant knowledge, skills, and experience), self-confidence, and resources (the support systems and the capital for jump-starting a business). These factors may be ascribed different levels of importance depending on the cultural or ethnic backgrounds of the would-be entrepreneurs (Giacomin *et al.,* 2011). Bacq and Alt (2018) proposed a framework to encapsulate the underpinning mechanism that gives rise to SE intentions. They suggested that empathy leads to SE intentions via an indirect path paved by self-efficacy ('how we see ourselves') and social worth ('how others see us') (Bacq & Alt, 2018). Accordingly, the entrepreneurial intentions expressed by some of the students may be spurred by self-perceived competency and the newfound sense of empathy developed through participation in the project.

The theoretical framework underpinning this new module integrates key elements of experiential learning to enhance social entrepreneurship education, including a social learning environment that leverages role models, peer collaboration, and communities of practice (Howorth *et al.,* 2012; Baden & Parkes, 2013), alongside a cyclical learning process grounded in Kolb's theory, which emphasises the reinforcement of practical application through reflective insight (Dobson *et al.,* 2018; O'Flynn *et al.,* 2023). Entrepreneurial education has been taking root at pharmacy schools in the United States (Shealy & McCaslan, 2018; Mattingly *et al.,* 2019a; Mogul *et al.,* 2020; DiPietro Mager *et al.,* 2021; Nguyen *et al.,* 2022), the United Kingdom (Laverty *et al.,* 2015), and United Arab Emirates (Shahiwala, 2017). However, these courses focus on profit-oriented pharmacy operations, provide little opportunity for the development of social awareness, and lack practical elements that would allow students to gain first-hand experience of starting a social enterprise. The mode of delivery tends to be classroom-based, relying, for example, on task-driven learning whereby students are required to 'compete' for mock funding through business proposals and sales pitches (Shahiwala, 2017; Nguyen *et al.,* 2022). The learning process occurs within a controlled environment devoid of real-world challenges and unpredictability.

Even classic, allegedly experiential entrepreneurship courses at non-pharmacy schools rarely take place beyond the confines of a classroom and do not create hands-on experiences for students. Often, there is a lack of social elements that are sufficiently impactful to cultivate empathetic traits or a sense of moral obligation, the primum mobile of SE (Hockerts, 2018). Consequently, those prior attempts at entrepreneurial or more specialised SE education in some cases result in a superficial understanding of how students would profit from cultivating entrepreneurial skills, without triggering real intentions of putting the skills to use.

Set apart from its non-SE predecessors, the course described in this work has unique elements of social responsibility and experiential learning. To date, no SE courses embedded within pharmacy programmes have been reported. Thus, comparisons can only be drawn with SE courses designed for non-pharmacist health professionals. These vary in complexity and designs, customised to profession-specific requirements. For instance, nursing students are required to draw on experiences with 'vulnerable groups' and formulate SE-related research questions (Backes *et al.,* 2022); occupational therapy students are tasked with identifying occupational injustices and, in culminating group coaching sessions, writing an SE business plan (Faison, 2021); public health students are given the assignment of reorienting a crowdfunding event towards objectives germane to environmental health and sustainability education (Verwij-Wood & Kruger, 2025). In the current module, students may apply their pharmaceutical compounding skills when determining the optimal recipe for the eco-friendly soap.

Aside from SE-linked traits, the entrepreneurial mindset in general is also relevant in the pharmacy profession. For instance, good communication is a must-have skill for pharmacists to deal effectively with patients, clients, and other healthcare professionals across various settings. In Kuala Lumpur, the uncrowded pharmacy space offers plenty of opportunities for potential pharmapreneurs. The city houses 412 chain and independent pharmacies, serving ~1.75 million residents (Ministry of Health Malaysia, 2024). This is considerably below the average density of community or retail pharmacies previously reported for upper-middle income countries (2.36 vs 7.33 per 10,000 people; International Pharmaceutical Federation, 2021). Hence, there is ample room for growth, sustained by the hybrid system of medication

supply in Kuala Lumpur and also other states of Malaysia. Under this system, prescribing and dispensing are not strictly separated, allowing patients to purchase medications from either a clinic or a community pharmacy.

The study findings suggest that the structure of this course could be used as a template to set up specialised modules for training potential (social) entrepreneurs; or more generic modules for teaching interpersonal skills. Across professions and cultures, employers consistently regard interpersonal skills as one of most valued traits in job seekers (Zegwaard, & Adam, 2020; Succi & Canovi, 2020; Hickman & Stoica, 2023; KhooYong & Ling, 2023). However, gaps still exist between graduates' competencies and employers' expectations, prompting suggestions that universities should stay proactive in identifying and remedying inadequacies in their curricula (Manevska *et al.,* 2018; Hickman & Stoica, 2023; Yong & Ling, 2023). Experiential, field-based learning could allow students to effectively practice their interpersonal skills within real-life settings and make 'deeper connections' (Fedesco *et al.,* 2020) between theories or simulations in a classroom and actual interactions with other people. In the conventional setting of a classroom, the students may not be exposed to the same multitude of communication cues that occur in everyday or more formal conversations. In this study, the students commented that participation in the course helped them to improve interpersonal and organisational skills (i.e., teamwork, leadership, and problem-solving abilities), and this in turn rendered them more socially confident.

Several limitations of this course are worth discussing. Firstly, a major roadblock to replicating it at other schools is obtaining the necessary funding for purchasing the raw materials and building the soap production pipeline. This is no mean feat, given the increasingly aggressive funding cuts which seem prevalent in many tertiary institutions. This limitation is compounded by differences between pharmacy schools in the minutiae of their syllabuses, as a certain degree of flexibility is permitted. Where entrepreneurship is not a mandatory subject, it may be challenging to garner the necessary resources for establishing and managing an SE course.

Secondly, the students were divided into different subcommittees; so, they probably ran into problems or challenges that varied substantially from their peers', and this could have led to different sets of learning opportunities and outcomes.

Thirdly, mainly first-year students were encouraged to enrol on the course. They were still acclimatising to a new mode of study at an institution of higher education, and this may have caused them to be relatively receptive to new ideas and to perceive their learning experiences positively.

Moreover, this study primarily relied on qualitative self-reported data, which provided valuable in-depth insights into participants' personal experiences; however, it lacked objective, quantitative measures commonly used in surveys to evaluate the effectiveness of the new module. Some students incorporated Malay terms in their reflections to better express themselves, thus the translation of the quotes may have introduced limitations in accurately interpreting their intent; this was considerably mitigated as the authors' interpretations were made based on the original written language. Additionally, social desirability bias may have influenced students to portray the course more positively. This bias was partially addressed by assignment instructions that encouraged honest reflections and reassured students that negative feedback would not affect their grades. Despite these efforts, limitations such as recall bias, desirability bias, and researcher interpretation remain inherent in qualitative self-reported data. Therefore, future research should consider incorporating objective measures alongside self-reported data to triangulate findings, thereby enhancing the reliability and validity of the study's conclusions.

Finally, this report has only dissected a cross-section of SE education, the learning outcomes of which could only be accurately assessed (more apparent) in the long term.

Conclusion

This course has been developed to create a field-based learning environment for teaching SE to pharmacy students. By collaborating with a local community in starting a small-scale business, the students learned a melange of social entrepreneurial skills and values in keeping with the salient learning outcomes of the course. The post-course assessment showed that the students enjoyed their experiences of participating in the project. It is suggested that this experiential learning module, driven by the conception and management of an actual business, may be replicated for effective teaching of SE in various other academic programmes or at other universities.

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Declaration of Interest

The authors declare no conflict of interest associated with this study.

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