Original Article

Structured experiential learning placement for pharmacy undergraduate students – a pilot study

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ABSTRACT

Integration of a pharmacist role into the United Kingdom core healthcare services became better recognized in recent years. The General Pharmacy Council is modernizing pharmacy education through the introduction of the foundation year, replacing the pre-registration year, moving to five-year from a four-year degree, and proposed hands-on undergraduate placements across the five years. Experiential learning placements (ELP) are not a component of the current pharmacy education. ELP was designed as a pilot, to explore the logistics and sustainability of this initiative. While the sample was small (n=6), the students who attended demonstrated good academic performance in exams and practical assessments. Students and supervisors were provided with structured activities, a workbook guide, and students' pre-placement training. The pre-placement taught topics were; counter medications counseling, measuring blood pressure, selling devices such as thermometers, receiving prescriptions from patients, and stock and waste management. The community pharmacists appreciated the structured activities and workbook; and having the freedom to allocate other activities to the students during the placement period. The low uptake by students during the pilot, was due to their preference to take paid jobs rather than unpaid placement, combined with the unwillingness of community pharmacists to provide unremunerated ongoing participation.

Keywords: Pharmacy undergraduates, Experiential learning, Workplace-based placements, Reflective workbook tasks, Student feedback

Introduction

"Community pharmacy contractual framework 2019-2024 describes new services which will immediately be offered through community pharmacy as well as a programme to develop evidence-based additions to those services. Foremost amongst the new services is the new national NHS Community Pharmacist Consultation Service, connecting patients who have a minor illness with a community pharmacy which should rightly be their first port of call" [1].

The innovative experiential learning placement was developed to explore its effectiveness in preparing pharmacy students for future healthcare challenges. Newly graduated pharmacists are expected to be competent to meet the expectations of the National health services (NHS) [2]. To be able to do that, significant reform to pharmacy education is necessary and will require workforce transformation [3]. The General Pharmaceutical Council (GPhC) proposals to integrate the pre-registration year within the pharmacy degree, recognize the need for students to experience early exposure to patients in a variety of settings, and different methods of implementation are being discussed [4-6].

Several studies revealed that the patients' health benefits and the NHS services cost-effectiveness when the pharmacists integrated into core healthcare teams are greater and sustainable [7]. Pharmacists have the potential to demonstrate their skills in the new NHS landscape, in areas such as minor aliments treatment public health and diseases prevention, and complex medication regimens management [8]. As described in the new five-year contractual framework, out of £13 billion funding for community pharmacy, with a commitment to spend £2.592 billion over five years from 2019-2024 [1]. This significant investment recognizes the contribution that community

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pharmacy is making toward the delivery of the NHS long-term plan.

In GPhC consultations, it was highlighted that students' early exposure to patient encounters equips them to work across a range of sectors and settings which is proposed to be an integral part of the proposed five-year model currently being introduced [4].

Experiential learning at the undergraduate level provides an opportunity for the transformation from traditional shadowing placements to hands-on Experience [9].

This pilot study was designed in 2018, when the major reform changes required to pharmacy education, pharmacy practice, and workforce transformation were not yet publicly discussed by the GPhC or Health Education England (HEE) [3]. The key influencing factors for the development of an effective undergraduate placement course are listed in **Figure 1**.

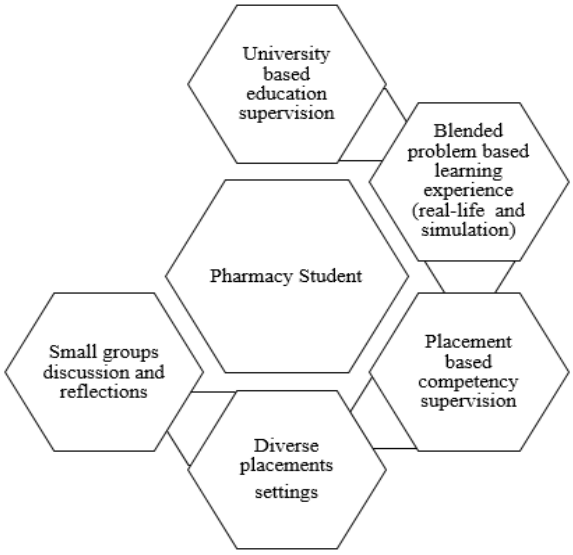


Figure 1. Key factors for effective undergraduate placement course

Aim and objectives

The pilot study aimed to assess the effectiveness, logistics, and practicality of the proposed MPharm progressive experiential learning model for students in the first three years of the MPharm four-years course model.

Materials and Methods

This pilot study focused on developing a structured unpaid experiential learning supported by a workbook to provide a guide for students and supervisors. Student's and community pharmacists' participation was voluntary. The placements required students to undertake 12 sessions of three-hour each over 6-12 days, over 2-6 weeks during the summer holidays. The pilot was intended to continue for three years and the student-community pharmacists team be maintained. The placement also included small group discussions and reflective writing.

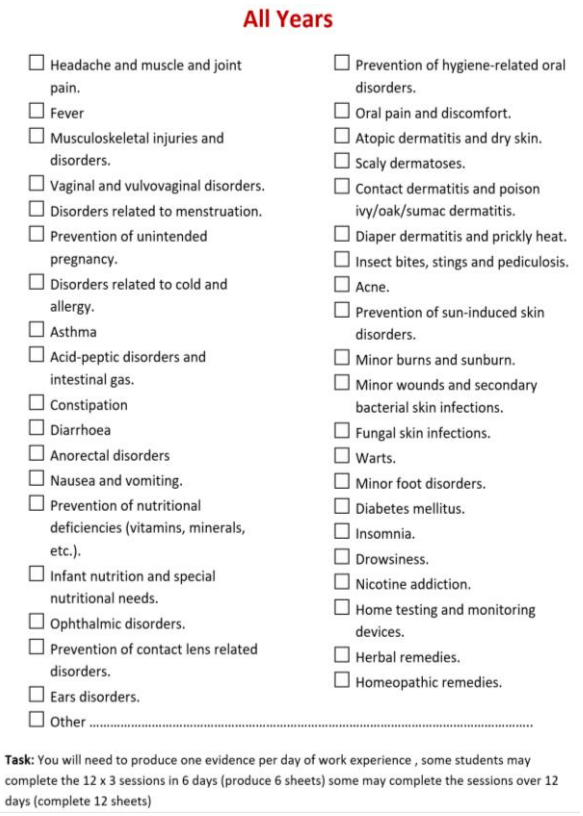
Study sample

All students in the first-year MPharm enrolled in 2018 were invited to participate in the study. Students were asked to approach community pharmacies close to the location where they would spend their summer holidays. When a placement place was secured and the community pharmacist chose to participate and signed a consent form, the student was asked to:

1. Undertake unpaid workplace-based activities chosen by their supervisors for 12 sessions, 3-hour each during summer breaks. The days and times of the visits were arranged by each student and their supervisor.
2. Maintain a diary describing their workplace-based experiences.
3. Complete a reflective writing assignment, every two weeks.
4. Complete a feedback questionnaire at the end of the study.
5. The volunteer students were informed that their participation was not counted towards their MPharm degree program grades.

Community pharmacists were approached and nominated by the students who expressed interest to participate in the study. After the community pharmacists signed the consent form, they were asked to:

1. Precept first-year MPharm student for three consecutive years starting 2018.
2. Integrate their student into their pharmacy workflow and use their best judgment to give her/him a steadily increasing breadth and depth of workplace experiences. The supervisors were deliberately left to decide on the type and order of activities as they believed appropriate for their students in their pharmacy, chosen from the range of suggested activities listed in the provided workbook **(Figure 2)**.
3. Participate in the assessment of their student's performance at the end of the 12 sessions.
4. Complete a feedback questionnaire at the end of the study to express their opinions about pre-placement training and workplace-based learning.
5. Agree not to pay students or be paid by the students for work related to this placement.



All Years

- ☐ Headache and muscle and joint pain.
- ☐ Fever
- ☐ Musculoskeletal injuries and disorders.
- ☐ Vaginal and vulvovaginal disorders.
- ☐ Disorders related to menstruation.
- ☐ Prevention of unintended pregnancy.
- ☐ Disorders related to cold and allergy.
- ☐ Asthma
- ☐ Acid-peptic disorders and intestinal gas.
- ☐ Constipation
- ☐ Diarrhoea
- ☐ Anorectal disorders
- ☐ Nausea and vomiting.
- ☐ Prevention of nutritional deficiencies (vitamins, minerals, etc.).
- ☐ Infant nutrition and special nutritional needs.
- ☐ Ophthalmic disorders.
- ☐ Prevention of contact lens related disorders.
- ☐ Ears disorders.
- ☐ Other .....
- ☐ Prevention of hygiene-related oral disorders.
- ☐ Oral pain and discomfort.
- ☐ Atopic dermatitis and dry skin.
- ☐ Scaly dermatoses.
- ☐ Contact dermatitis and poison ivy/oak/sumac dermatitis.
- ☐ Diaper dermatitis and prickly heat.
- ☐ Insect bites, stings and pediculosis.
- ☐ Acne.
- ☐ Prevention of sun-induced skin disorders.
- ☐ Minor burns and sunburn.
- ☐ Minor wounds and secondary bacterial skin infections.
- ☐ Fungal skin infections.
- ☐ Warts.
- ☐ Minor foot disorders.
- ☐ Diabetes mellitus.
- ☐ Insomnia.
- ☐ Drowsiness.
- ☐ Nicotine addiction.
- ☐ Home testing and monitoring devices.
- ☐ Herbal remedies.
- ☐ Homeopathic remedies.

Task: You will need to produce one evidence per day of work experience , some students may complete the 12 x 3 sessions in 6 days (produce 6 sheets) some may complete the sessions over 12 days (complete 12 sheets)

Figure 2. Minor aliments activities.

Qualitative analysis was undertaken of the opinions of the community pharmacists and MPharm students regarding the value of the workplace-based activities to them, the inclusion of the workbook and pre-placement training, the small group discussions, and reflection on the learning and feedback process.

Module preparation

A workbook for the pilot study was developed based on the results from a survey of community pharmacists conducted in early 2017 (n=54) [2] and the competency framework produced by the GPhC [4], which contains three modules, where the level of difficulty of the tasks and the skills required to perform them increases for each year within the undergraduate course. Students were trained on specific clinical skills (e.g., measuring blood pressure) in the class and certified as competent by the trainer to provide the service at the community pharmacy hosting their experiential work experience. The modules designed **(Figure 3)** for this study were developed based on the following underpinning components:

1. Knowledge gained during the MPharm undergraduate course curriculum during the academic year and the provided workbook.
2. Clinical competencies gained from the course and, and the additional pre-placement hands-on training provided by the researcher to apply in real-life scenarios during the study experiential summer placement.
3. Professional principles and practice, code of practice for Pharmacists, and law and ethics.

TASK 1 – Blood Pressure Monitoring

Learning outcomes	GPhC standards	Assessment	Competency
Year 1		Evidence	C/NYC √ as applicable
➢ To understand basic physiology of blood pressure and importance of measuring ➢ To understand Systolic and Diastolic terms ➢ Correct use of BP machine apparatus ➢ Determine right cuff size ➢ Correct procedure of blood pressure measurement ➢ Able to highlight outcomes for advice from the Pharmacist practitioner	1 2 3 4 5 20 21 27 28 38 39	OSCE	
Year 2			
➢ Understand the concept of confidentiality and empathy towards patients ➢ Be able to obtain correct BP readings with automatic BP machine ➢ Be able to interpret the readings for risks associated ➢ Be able to understand the stages of hypertension ➢ Be able to demonstrate basic lifestyle interventions for good BP control	1 2 3 7 8 9 14 27 35 36 39	OSCE	
Year 3			
➢ Able to explain the factors which could affect BP readings. ➢ Demonstrate practical knowledge of BP monitoring skills on at least 3 patients/ customers. ➢ Able to provide comprehensive lifestyle intervention. ➢ Able to carry out a BP review and able to work out BP care plan (level 1)	1 2 3 12 14 16 17 18 37 39 42 44 45	OSCE	

a)

TASK 2 - Stock Management

Learning outcomes	GPhC standards	Assessment	Competency
Year 1		Evidence	C/NYC √ as applicable
➢ working knowledge of the importance of good stock management, including: a) The rotation of stock b) Checking expiry dates of stock c) Identifying damaged, contaminated or deteriorated stock d) Storage under appropriate conditions ➢ A working knowledge of the difference between branded and generic drugs	1 2 3 4 5 19 22 23 24 25 26 28 39 43	OSCE	
Year 2			
➢ A working knowledge of the **COSHH** and **health and safety** requirements related to above three parameters of pharmaceutical stock management ➢ A factual awareness of current legislation/ policy/good practice that applies to: • Ordering of pharmaceutical stock including "specials" • Receiving Pharmaceutical stock • Maintaining stock in the premises	1 2 3 14 29 39 40 43	OSCE	
Year 3			
➢ A working knowledge of the importance of referring to current drug alerts and company recalls when receiving pharmaceutical stock & knowledge of the action to be taken if stock is unavailable ➢ A working knowledge of the importance of maintaining correct, accurate documentation, including backup systems to IT failure where appropriate and parameters set for computer ordering system	1 2 3 11 13 14 15 17 30 35 36 37 39 42 43 44 45	OSCE	

b)

TASK 3 – Over the Counter Consultation Skills

Learning outcomes	GPhC standards	Assessment	Competency
Year 1		Evidence	C/NYC √ as applicable
➢ Demonstrate understanding of GSL/P/POM classification of pharmaceutical products/drugs. ➢ Understand restricted sale in absence of responsible pharmacist ➢ Able to counsel on MOA, indication, common side effects, Red flags and main counselling points for any 3 OTC products from pain section ideally Paracetamol, Ibuprofen and Codeine	1 2 3 28 38	OSCE	
Year 2			
➢ Understand the importance of taking patient history OTC ➢ Able to apply skills of WWHAM questions and conceptual approach to presenting scenario ➢ Able to counsel on MOA, indication, common side effects, Red flags and main counselling points for any 3 OTC products from gastric section ideally product selection from each Constipation/ Diarrhoea and Indigestion.	1 2 3 9 10 14 15 31 32 33 34	OSCE	
Year 3			
➢ Able to take patient OTC queries and refer appropriately to pharmacist ➢ Able to apply core consultation skills and able to explore patients' Ideas, Concerns and expectations. ➢ Able to counsel on MOA, indication, common side effects, Red flags and main counselling points for any 3 Topical OTC products from skin section ideally product selection from each Dry/ eczema skin, parasitic infestations, fungal skin infections.	1 2 3 6 11 12 13 14 15 16 17 39 41 42 44 45	OSCE	

c)

Figure 3. Pre-placement training

Students recruitment

First-year students in MPharm (n=97) were invited to the initial project presentation. Two recruitment events were offered. A brief explanation of the project was provided followed by questions and answer session and participation packs (participants' information sheet and consent forms) were then handed out and students were given the freedom to find local pharmacy placements best suited to their geographical locations during summer holidays. Only 22 students returned signed consents and had a community pharmacist agree to supervise them.

Results and Discussion

Seventeen students attended the training, however, only six students completed the 36 hours placement as laid out in the first phase. There was no formal withdrawal of participation, they just ceased communications **(Table 1)**.

Table 1. Sample breakdown

Year	2018/2019
Number of students approached	97 (100%)
Number of students who returned signed consent forms	22 (23%)
Participants had a secured workplace	22 (23%)
Participants attended briefing / Training sessions	17 (18%)
Participants completed 36 hours of experiential learning	6 (6%)
Participants returned reflection worksheets	1 (1%)
Participants Returned feedback forms	4 (4%)

On the final feedback, all students unanimously strongly agree that the pharmacy supervisor facilitated their learning. The grades achieved by the participant students in their academic modules were remarkable **(Table 2)**.

Table 2. collated students feedback

Questions	Student 1	Student 2	Student 3	Student 4
Pharmacy year	1st year	1st year	1st year	1st year
Year of placement	2019	2019	2019	2019
The placement was helpful and enhanced my knowledge about pharmacy practice	agree	Strongly agree	Strongly agree	Strongly agree
The mentor pharmacist facilitated my learning during placement	Strongly agree	Strongly agree	Strongly agree	Strongly agree
The content of the workbook is helpful during placement	agree	Agree	Strongly agree	neutral
What was your final grade last year?	72%	>85%	83%	>85%
Any other comments which can help us make this experience better for you?	No. Everything was great	None	A printed version of the workbook	Needs workbook clearer

Student's reflection

Out of four students who submitted feedback, only one completed the reflection template which is included in the workbook provided.

The intention was for the student to illustrate their learning journey at each visit against the abovementioned key parameters of ELP in community pharmacy placement. The reflection highlighted the practical aspects of how work placement enhances students' understanding of the subject area **(Figure 4)**.

Stock management (as per workbook task)

"This visit did reinforce previous learning as I had worked in a pharmacy before, and the same procedure had to be done when ticking off the orders that came in. This allowed me to understand why it was important for me to check the stock that had been ordered so no mistake of the wrong order can be put away" (Student 1).

Confidentiality and effective communication (reflection on practical experience)

"Yes, I was reminded to make sure I keep details of the patients and customers safe and secured. I also had to make sure they were kept private and not to speak loudly in front of other customers. This was something I was taught during my lectures – confidentiality. Patients address had to be doubled checked and confirmed" (Student 1).

OTC advice (re-enforcing taught lecture knowledge)

"This visit did reinforce previous learning. During the topic of molecules, cells and systems within our lectures we learnt about what causes certain viruses, chicken pox and shingles was one example that we learnt about and how it was an example of a neural virus. It was beneficial to see something that I was taught in a more practical form and therefore allowed me to understand the condition and treatment better" (Student 1).

Figure 4. Student reflections

Only three supervisors took the time to provide feedback regarding their experience of hosting students. Those who did not host students preferred to only respond briefly as at the time of placement workload did not allow any time to use towards

hosting students **(Figure 5)**.

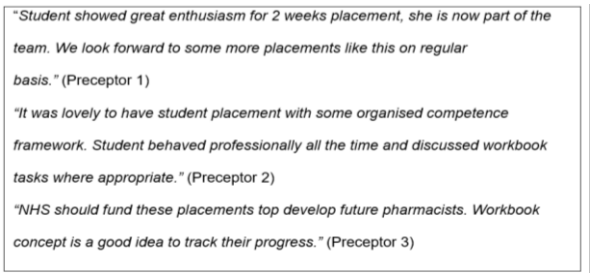


Figure 5. Supervisor reflection

limitations

The study faced some difficulties and limitations which can be summarised as:

Student related issues: Students' recruitment did not achieve the planned outcome due to multiple factors including; the preference of having paid work experience, preference to have placement fully organized by the University not by them, the uncertainty of exam results, having to re-sit assessment items, and the desire to use the summer break for holiday or to prepare for the following year of study. With the current intensive four-year curriculum, study workload, and the demand for face-to-face classroom attendance; embedding this placement into the program during the academic year to free the summer holiday, is almost impossible unless it is counted towards the student's grades and replaced other simulation activities current included in the course. Early identification of student participants is important [10], however, it did not work in favor in this case, as keeping participants connected and engaged from November to the summer break proved problematic, especially when they started to prepare for the exams in May. It was also noted that first-year students are in the early phase of transition from the high school setting to a university and might have found the university workload overwhelming, a factor to consider when asking them to find the placement pharmacy as they may not be capable of doing so, or have difficulty negotiating with a pharmacy close to home from their term-time location. However, it was noticed that students who participated embraced the new way of learning and appreciated the self-reflective framework. Within the same pharmacies where they participated students were offered work after the placement and pre-registration positions. The supervisor-student relationship is critically dependent on effective communication [11]. In this pilot study, communication was mainly by emails, which might be seen by students as a barrier to asking questions or seeking clarifications and might play a major role in disrupting the flow of information. Students who seem disengaged from the academic environment may remain socially engaged with the institution [12]. Various studies highlight the negative impact of excessive time in paid work and the disengagement element in academic or extracurricular activities and grade achievement [13, 14]. A common reason students defer or withdraw from a course is financial stress, students who worry about money find it difficult to concentrate on their studies [15].

Pharmacist-related issues: The initial community pharmacy survey highlighted funding as an important element to consider as these placements use organizational resources. As a result of not being able to offer them a payment, some pharmacists after agreeing to take students indicated their inability to do so, others found it time-consuming to assess students' competencies considering it is competing with the time offered for the pre-registration student they have. Additionally, none of the six pharmacists who hosted the students initiated the small group discussions as they took only one student each, and students themselves did not communicate with each other.

Study design and education environment-related issues: Several issues impacted the results from this pilot related to the 2018-2019 academic year pharmacy education environment and the design of this study such as; the intensive theoretical face-to-face teaching courses structure on the university campus, the lack of funding for pharmacy students placement, the competition on placements places in the local community, the preference to employ workers rather than train students to undertake tasks, the inability to use the university remote learning platform as the placement activities were not graded nor counted towards the MPharm degree requirements and the uncertainty of future pharmacy education. Additionally, the study design followed an innovative path and included small groups discussion between all students mentored or supervised by one pharmacist as the core of workplace experience sharing, however, the small sample with only a single student at each placement site did not allow this to take place.

Conclusion

The proposed framework in the pilot study showed practical enhancement in undergraduate pharmacy students' learning through a balanced input through academic tutor support, curriculum workbook, and placement supervisor facilitation. The limitations in this study were due to temporary physical barriers which could be resolved with appropriate stakeholder and regulatory involvement.

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Conflict of interest: None

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Ethics statement: Ethical clearance was granted by the University of Wolverhampton, Faculty of Science and Engineering Ethics Committee on 27/07/2018 Ref: LSEC-2019-20-HM-138.

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