

Student pharmacist practice-based interprofessional education in Scotland: a qualitative study of stakeholders' views and experiences

Tesnime Jebara^a, Ailsa Power^b, Anne Boyter^c, Sabrina A. Jacob^c, Jane Portlock^d, and Scott Cunningham^a

^aSchool of Pharmacy and Life Sciences, Robert Gordon University, Aberdeen, UK; ^bNHS Education for Scotland, Glasgow, UK; ^cStrathclyde Institute of Pharmacy & Biomedical Sciences, University of Strathclyde, Glasgow, UK; ^dSchool of Life Sciences, University of Sussex, Falmer, UK

ABSTRACT

Scottish Government funding supports practice-based experiential learning (EL) for student pharmacists. We explored views and experiences of key stakeholders on current practice and future development of interprofessional education (IPE) in EL including barriers and enablers. A pre-piloted schedule was used for online qualitative semi-structured interviews. eMail invitations were sent to 37 stakeholders with an information sheet and consent process. Interviews were analyzed thematically by two researchers independently. Recruitment continued until data saturation and wide representation were achieved. Twenty interviews were conducted with eight EL facilitators, seven faculty and five policy stakeholders. "Nature and experience of current IPE in EL activities" and "Future developments" were the two main themes. Barriers and enablers were also identified at macro, meso, and micro socio-institutional levels. The essence of the analysis highlighted stakeholders' views of the importance of building on current IPE while challenging the ethos and culture of EL practices. All stakeholders should be involved in co-production, training, piloting, and evaluation of curricular developments to overcome logistic barriers and enhanced enablers. Finally, the importance of workload management strategies and continuity of funding for success was also stressed by those interviewed. Future research could include designing frameworks for developing and implementing IPE within EL.

ARTICLE HISTORY

Received 16 December 2020
Revised 18 November 2021
Accepted 19 November 2021

KEYWORDS

Interprofessional education;
learning in practice;
placement; undergraduate;
pharmacy education

Introduction

Interprofessional education (IPE) is defined by the Centre for the Advancement of IPE (CAIPE) as "occasions when two or more professions learn with, from and about each other to improve collaboration and the quality of care" (Centre for the Advancement of Interprofessional Education [CAIPE], 2002, p. 6). IPE is a vital part of strategies to address global health workforce crises. The World Health Organization (WHO) urged policy makers to improve healthcare delivery and outcomes through committing to build IPE programs (World Health Organisation [WHO], 2010). A WHO global cross-sectional survey obtained 396 responses representing 41 countries from six WHO regions (Rodger et al., 2010). The authors concluded that there was work required to robustly design, deliver and evaluate IPE. Barr (2015) identified global progress in the development and implementation of IPE. More recently a systematic review showed higher prevalence of IPE across developed compared to developing countries (Herath et al., 2017).

Healthcare regulatory bodies have a strong mandate for integration of IPE within curricula. In the United States (US) the Accreditation Council for Pharmacy Education (Accreditation Council for Pharmacy Education, 2015) included IPE as a key standard in pharmacy curricula. One of the key elements under this standard noted the need to incorporate opportunities for interprofessional activities into the didactic and experiential curricula. This is similar in Canada (Canadian Council for Accreditation of Pharmacy Programs, 2020) and the United Kingdom (General Pharmaceutical Council, 2021).

Integration of IPE in practice-based settings: stakeholder perspectives and outcomes

There is evidence from a range of stakeholders including faculty, clinical practitioners, students, and education and healthcare organizations relating to value of IPE in educational practice. Lapkin et al. (2013) carried out a systematic review on the effectiveness of IPE and concluded that there should be strategic consideration of the aims, learning outcomes, and approaches for IPE. More recently a summary of the benefits of IPE showed that there is little conclusive evidence to show benefits relating to health outcomes and that most studies focus on the characteristics of IPE initiatives and the student viewpoint (Illingworth & Chelvanayagam, 2017). This work showed that students and other stakeholders valued IPE and believed it clarified roles and positively influenced attitudes. McCloskey et al. (2019) determined the perceptions of qualified pharmacists and pharmacy undergraduate students on IPE developing collaborative practice (CP) and concluded that it should be "introduced and reinforced throughout undergraduate studies and into the workplace" (p. 286).

The importance of workplace or contextual practice-based learning initiatives was noted within the WHO Framework (WHO, 2010); this could involve implementing strategies that encourage IPE initiatives in practice-based settings. In a systematic review Olson and Bialocerkowski (2014) reported that delivery modes of IPE that integrate clinical practice based experiential learning (EL) could positively influence the effectiveness of CP competencies. Murray-Davis et al. (2012) and T. Lawlis

et al. (2016) have shown from the students' perspective, contextual practice-based IPE is more relevant and it is well received. Jones et al. (2012) explored IPE in US colleges and schools and showed that just over half (55%) had IPE in practice experiences; a key barrier included lack of healthcare facilities and staffing resource.

Given this evidence of benefit for but challenges to developing practice-based IPE, a Task Force was set up to explore intentional IPE in experiential education in US Doctor of Pharmacy courses. Through a survey of faculty members, it was found that most IPE in experiential settings is developed and implemented in an unplanned manner with minimal evaluation, and a program of work was needed to integrate it (Grice et al., 2018). Strategies that help overcome barriers to implementing IPE have been proposed by Kent et al. (2020) who explored clinical educator stakeholder views on the value of observing other healthcare professionals at work in IPE in practice settings. They concluded that such observation, although usually unplanned, can offer sustainable IPE in EL.

Despite this evidence for stakeholder aspects of IPE in EL, it has been shown that more needs to be done to address the culture related to IPE at practitioner and organizational levels (El-Awaisi et al., 2018a). Indeed, the concept of culture change was also considered by Oandasan (2015) who highlighted the importance of this at organizational levels with reflection on benefits of using theoretical approaches. Student culture-related barriers that can impact the success of IPE have also been noted including attitudes related to professional identity, assumptions about interdisciplinary working, and perceptions around hierarchy (Cerra et al., 2015).

Implementation of IPE within pharmacy curricula in the UK

The General Pharmaceutical Council (GPhC), the UK regulatory body for pharmacy education and practice, launched new standards in January 2021. These clearly articulate that curricula need to provide IPE and that student pharmacists must encounter an appropriate breadth of patients and professionals in a range of environments, whether during simulations or in practice (General Pharmaceutical Council, 2021).

In 2018, the Scottish Government made Pharmacy Additional Cost of Training (ACTp) funding available to support the development of EL for students studying 4-year undergraduate Master of Pharmacy (MPharm) programs in Scotland. In May 2019, an EL National Stakeholder event recommended incorporating IPE into EL. In response, Robert Gordon University and the University of Strathclyde are building on current on campus programs of IPE to include IPE in EL. Additionally, the opportunities for planned and unplanned IPE in EL in current placements have been highlighted to EL Facilitators (Preceptors). However, no systematic investigation has been undertaken on what IPE in EL activities are currently provided, how they should be developed, or key stakeholders' views of IPE in EL.

This study aimed to explore key stakeholders' views and experiences of IPE for government funded EL for student pharmacists in Scotland and consider wider implications for its future development and implementation in pharmacy curricula including an exploration of barriers and enablers.

Methods

Study design

The research was undertaken according to an interpretivism philosophy using qualitative research methodology using interviews to facilitate in-depth rich data capture and analysis.

Settings

Interviewees were recruited from all major organizations in Scotland involved in pharmacy IPE and/or EL. These included the two Scottish Schools of Pharmacy, members of the ACTp Oversight Board and National Health Service Education for Scotland (NES). Additionally, the 14 National Health Service (NHS) Boards were used to recruit from different sectors of practice including; secondary care, primary care/general practice (GP) practices, and community pharmacy settings.

Inclusion and exclusion criteria

All staff who had a role in developing or delivering IPE and EL to pharmacy students in Scotland and could potentially influence future developments were considered for inclusion. This included university staff, NHS Education for Scotland staff, NHS Board-based Education and Training Leads and EL facilitators. Policy influencers such as directors of pharmacy within different health boards and members of a national ACTp Oversight Steering Group for practice-based EL were also included. Individuals involved in testing and piloting data collection tools were excluded.

Sampling frame and sampling

Using the inclusion criteria, a sampling frame of potential key stakeholders and contact e-mails was collated from each of the identified organizations and settings. This was achieved through the combined knowledge and experience of the organizations and individuals from members of the research team and through the wider ACTp Oversight Steering group, which was chaired by a medical school dean, offering an interdisciplinary perspective. In total a list of 37 stakeholders was produced, and they were each sent an e-mail invitation to participate.

To ensure maximum variation sampling, consideration was given to the main dimension of interest to achieve a diversity of views, namely, the organizational setting of stakeholders. The aim was to recruit individuals from each setting while being pragmatic and recognizing that some flexibility would be required given personal workload pressures during the COVID-19 pandemic. Recruitment from snowball sampling (Jensen & Laurie, 2016) was planned but was not required.

In total 23 stakeholders agreed to take part, and interviews were conducted with 20; the remaining 3 did not respond further. Given the political importance of the focus of this work to pharmacy education and practice in Scotland the team believed it was important to offer an interview to all stakeholders who had agreed to participate. However, the Francis et al. (2010) method of determining data saturation was considered.

Interview schedule development

The interview schedule was informed by an extensive literature review and discussions with the project team and members of academic staff. It was developed in line with interpretivist approaches, and due consideration was given to how questions could effectively illicit responses. While developing these questions, the project team (all authors on this paper had experience and publications in qualitative methods), were focussed on the study aims and a need to provide a deeper understanding of individual and organizational practice and policies that facilitate the development of IPE in EL. The interview schedule was reviewed for face and content validity by the project team piloted prior to use, and further iterative modifications during data collection were not required. An overview of the interview schedule questions is presented in [Table 1](#).

Data generation

E-Mails were sent to stakeholders by a research team member (TJ or AP). It contained the participant information sheet and contact details in case of questions or concerns. If they wished to participate, they accessed a web link to provide their details, signed an online consent form, and indicated an interview time. Interviews were digitally audio-recorded for transcribing. All interviews were conducted by a team member with extensive qualitative research experience (TJ). Due to the COVID-19 pandemic all interviews were online using Zoom® (Zoom Video Communications, USA). Online interviews have been shown to be an effective and valid approach with advantages in terms of data management and security (Archibald et al., 2019; Janghorban et al., 2014; Lobe & Morgan, 2021).

Data analysis

Interviews were transcribed verbatim and checked for accuracy. The data generated were analyzed thematically following the steps outlined by Howitt (2016). The initial coding framework

Table 1. Interview schedule.

- Could you tell me a bit about your roles and responsibilities in relation to delivery of the MPharm course?
- Can you tell me how you have been involved in developing and/or the delivery of any IPE within EL activities specifically?
- Can you please describe the different IPE within EL activities that you have been involved with or are aware of?
- Can you tell me about your input (if any) to the planning and preparation for these activities?
- What were the resource implications for you, your team and your organization associated with developing/delivering these activities?
- Overall, how would you describe your experience of developing/delivering IPE within EL activities?
- How important do you feel IPE in EL is within the MPharm course?
- How do you think others perceive their involvement in these activities?
- Have you tried to gather feedback on the value of any of these activities at all? In what way?
- What are your views on how IPE activities within EL should be developed and delivered in the future?
- How can the experience of IPE within EL activities be improved for students and those involved in development and delivery?

Note. MPharm = Master of Pharmacy degree, IPE = Interprofessional education, EL = experiential learning

was applied to one interview by different researchers, modified, refined, and applied to another interview. Discussions helped refine the coding framework further; it was then applied to the remaining transcripts. The coding frame was continually revised as the analysis progressed. Analysis was independently conducted by two experienced qualitative researchers (TJ and either AT or LK – see acknowledgments). This project was conducted during the COVID-19 pandemic and therefore it was not possible to have only project team members involved in the data analysis. A pragmatic approach was taken whereby one team member (TJ) analyzed all interviews, and two non-team members (AT and LK), who also had extensive experience of qualitative data collection and analysis, were recruited from wider departmental university teams to support data analysis. The processes and stages of analysis were overseen at all stages by a Professor of Pharmacy (SC) who mediated disagreements that could not be resolved through team discussion.

Illustrative quotations offering insights into participants' lived experiences were selected through team discussion. These were used to produce a textural description of the theme and a structural description of the context or setting that influenced participants' experience.

Trustworthiness

Multiple techniques were employed to ensure the robustness of the research and enhance its trustworthiness according to the criteria published by Guba (1981). Credibility was enhanced through pilot testing of the interview schedule, audio recording and transcription checks, independent coding, and use of verbatim quotations. Transferability was enhanced through detailed reporting of the research process and inclusion of characteristics of the interviewees and settings. The processes of data analysis that involved repeated listening and review of transcripts helped ensure dependability. Lastly, confirmability was enhanced through regular meetings and discussion of the research processes with the whole research team and through inclusion of verbatim quotations.

Ethics and governance

Ethical approval was granted by Robert Gordon University, School of Pharmacy and Life Sciences (Approval number S184, 20 Feb 2020). As an evaluation of current practice, the study was exempt from NHS ethical review.

Results

Twenty interviews lasting approximately 30 to 45 minutes were conducted with 8 EL facilitators from different practice settings, 7 university faculty staff and 5 policy stakeholders (3 NES staff and 2 directors of pharmacy in Scottish health boards). Their mean age was 40.1 years; other demographic details are in [Table 2](#). Stakeholders interviewed had multiple roles and responsibilities. These roles included but not limited to planning and supporting student placements, supervising students while they performed tasks, engaging with and facilitating communications between stakeholders to support delivery and drive future developments.

Themes: views and experiences on current IPE, EL and future developments

Two main themes were identified from the interviews (Table 3). Further data are presented below in a narrative that initially describes the theme, then compares it across participants; finally, themes are related to each other as the narrative progresses. This resulted in a thematic array that shows the interlinks developed between the themes and sub-themes. From this the “essence” of views and experiences of IPE in EL was determined.

Main theme 1: nature and experience of current IPE in EL activities

Participants expressed a broad range of insights. This included descriptions of the nature of initiatives they had been involved in or had knowledge of. It was evident that the extent of these initiatives was quite limited and therefore their personal experience was similarly limited. However, many were able to use their own interprofessional working lived experiences and reflected on this in the possibilities for developing student

Table 2. Demographic data of interviewees (N = 20).

Demographic category	Number of respondents (n)
Gender	
Male	8
Female	12
Stage of career	
2–10 years qualified	7
Over 10 years qualified	13
Setting	
Community	2
Hospital	3
Primary care	3
University	7
Policy (NES and Directors of Pharmacy group)	5
Previous involvement in facilitating EL*	
Yes	17
No	2
Previous involvement in any type of IPE*	
Yes	18
No	1

Note. *One missing datum, NES = NHS Education for Scotland, EL = Experiential Learning, IPE = Inter-professional Education

Table 3. Main themes and subthemes from stakeholders’ interviews and cross-theme relationships.

Main Theme 1: Nature and experience of current IPE in EL activities	Main Theme 2: Future Developments – focus, opportunities and solutions for developing IPE in EL
1a. Importance of Classroom-based IPE activity as prelude to IPE in EL	2a. The IPE journey: scope for coherent planning of sequential development to collaborative practice
1b. Opportunistic in nature currently: identifying, creating and seizing unplanned opportunities	2b. Value and “grasp” all IPE opportunities: find ways to develop culture and ethos of staff and students
1c. More to do to “build in” IPE in EL to curricula/activities	2c. “Building in” IPE in EL: developing, implementing and evaluating it

Note. IPE = Interprofessional education, EL = experiential learning

pharmacist focussed initiatives. The participants were able to offer useful insights linked to the main theme, and these are outlined below as sub-themes.

1a: Importance of classroom-based IPE activity as prelude to IPE in EL

In relation to current IPE initiatives, participants generally identified these as classroom-based or simulation exercises rather than embedded in a planned way into students’ clinical placements. They considered that a continuum of development of IPE competencies was desirable with clear integration to the pharmacy curriculum. Participants believed that initiatives such as on-campus classroom-based IPE and simulation of “real life” practice-based situations helped develop an understanding of the purpose and principles of IPE. Such initiatives early in the student professional development journey could help to build interprofessional relationships and address pre-conceptions so allowing them to more effectively integrate into future CP (Table 4, Quotation 1).

1b: Opportunistic in nature currently: identifying, creating, and seizing unplanned opportunities

Some stakeholders reflected on and showed understanding of the challenges associated with developing, planning and implementing healthcare courses. They recognized change to courses requires addressing competing initiatives and demands from staff, university, regulators, and employers, so changes can be challenging and take some time. In this context, they noted that IPE during EL placements was usually unplanned (Table 4, Quotation 2). However, many also considered that there was scope to enhance this through being proactive in identifying and indeed creating IPE in EL initiatives.

1c: More to do to “build in” IPE in EL to curricula/activities

Developing this aspect requires proactivity in creating opportunities. Some participants mentioned a novel initiative related to IPE in EL. This was a pilot extra-curricular Pharmacy Longitudinal Clerkship (PLC), which had taken place in a remote rural part of Scotland (Table 3, Quotation 3). This PLC initiative was recognized as valuable but available to only a small number of students and not an integral part of pharmacy courses, but the experience could form a strong basis on which to build IPE in EL. Participants highlighted that other healthcare professionals could be used to facilitate development of pharmacy placements and that this should also be considered for integration to the pharmacy course curricula (Table 4, Quotation 4). Academic stakeholders recognized that building IPE in EL into courses could allow students to appreciate each other’s professional roles and identities, thus paving the way for more effective CP (Table 4, Quotation 5).

Main theme 2: Future developments – focus, opportunities, and solutions for developing IPE in EL

This theme focused on exploring ways to modify and improve IPE in general and specifically IPE in EL. Participants volunteered areas for development. Given the levels of experience

Table 4. Illustrative quotations for sub-themes.

Quotation Number	Sub-Theme	Illustrative Quotation(s)
1	1a: Importance of Classroom-based IPE activity as prelude to IPE in EL	"We want to start [IPE] as students because that builds relationships very early ... that also helps us integrate our pharmacists into practice ... cause they've already broken down some of the barriers ... " Policy Stakeholder 5
2	1b: Opportunistic in nature currently: identifying, creating and seizing unplanned opportunities	"At the moment I think they [IPE in EL activities] are more opportunistic. If they happen at all they're more opportunistic." Policy Stakeholder 2
3	1 c. More to do to "build in" IPE in EL to curricula/activities	"I have been involved with PLC (Pharmacy Longitudinal Clerkship) model, ... had a really novel opportunity for one of the students, to work alongside a medical student." Academic Stakeholder 1
4		"For example, within [health board name] ... offer the primary care placements out where the student is actually hosted more by the team within the GP (General Practitioners) practice ... " Policy Stakeholder 4
5		"I think just the ability to effectively work collaboratively ... understanding the different roles and how they [students] can all work together, how they can see the synergies ... " Academic Stakeholder 6
6	2a. The IPE journey: scope for coherent planning of sequential development to collaborative practice	"... with definitely patients, other pharmacists, I think doctors and nurses, but any other members of the MDT [multidisciplinary team] would be relevant as well ... I think they just need to interact with anyone that I would interact with on my daily workload." Hospital Pharmacy Stakeholder 1
7		"We need to be, I guess, aware of the curriculum, aware of what students have done, aware of the skills development that we're doing with students, and create appropriate activities for each level of the course." Academic Stakeholder 1
8	2b. Value and "grasp" all IPE opportunities: find ways to develop culture and ethos of staff and students	"I think it should be a bit of both; planned because you want them to meet competencies and performance standards ... But, I think there has to be opportunistic because the nature of the job is you don't know what's going to happen" Primary Care Pharmacy Stakeholder 1
9	2 c. Building in' IPE in EL: developing, implementing, and evaluating	"They [healthcare professionals facilitating IPE in EL] therefore have to have a set of aims or goals for each particular session that they're having with these guys [students], in order to make sure they can assess whether they achieve the goals and achieve the aims and outcome." Community Pharmacy Stakeholder 2
10		"Is it an easy thing for the people in the ground to do? No, I think it takes a wee bit more planning, a wee bit thought. Plus, these are very, very busy with a large workload. I think ACT will help, because ACT money is now out there and people are being employed on the back of ACT." Policy Stakeholder 2
11		"A lot of the pilots didn't really get off the ground in the end because [of] funding, we didn't have any more funding." Academic Stakeholder 6

IPE = Interprofessional education, EL = experiential learning

and expertise of the participants in practice and education, many were constructive in their suggestions for primary focus for developments and the scope and potential for new initiatives. Participants also offered solutions and ways in which to mitigate or manage the various barriers identified.

Table 3 outlines future development sub-themes 2a to 2 c. Analysis showed that these related well to main theme 1 and its sub-themes. How these "future development" sub-themes related to other themes is provided below.

2a: The IPE journey: scope for coherent planning of sequential development to collaborative practice

Some stakeholders reflected on the need to consider a holistic approach to the IPE journey for pharmacy students and a coherent approach to building in IPE in EL. This included aspects such as who the students should interact with and the potential influence of stage of study. Different stakeholders expressed a view that students do not necessarily have to work exclusively with other students to develop their IPE competences but could do this effectively with qualified healthcare professionals and patients (Table 4, Quotation 6).

In terms of stage of study, stakeholders agreed that careful consideration should be given to coherent planning of IPE and IPE in EL. Most stakeholders agreed that IPE in EL opportunities should ideally be offered to all students studying the

MPharm course not something for discrete groups or an elective. However, most stakeholders also recognized that currently IPE, in all forms, is often not a mandatory part of pharmacy curricula. There may be a diversity of experience and competencies in students, and this should be considered with the type of activities they are expected to perform during placements tailored to their level of knowledge and skills. The view from some was also that this "tailored" approach may be time-consuming and that training around this should be built into the approaches to developing the IPE and the student "journey" toward CP (Table 4, Quotation 7).

2b: Value and "Grasp" all IPE opportunities: find ways to develop culture and ethos of staff and students

Although planning IPE activities prior to students arriving to their placement sites would allow for competencies to be met, stakeholders stressed that students should also be allowed to participate in opportunities that arise during placements, as healthcare can be unpredictable (Table 4, Quotation 8). Participants highlighted that it was essential to maximize all opportunities whether student to student or student to qualified professions. Some mentioned a need to "adjust" the ethos and culture around such educational practice and this could perhaps be achieved by building this into overarching course aims and philosophy.

2c: “Building in” IPE in EL: developing, implementing, and evaluating

Participants considered that IPE in EL should be promoted because of the educational advantage that it brings and its potential for improvement in CP and so patient outcomes. The view was that it would have to be presented carefully, and learning outcomes needed to be articulated to the host sites to ensure that students have a meaningful experience (Table 4, Quotation 9).

Planning and development should also include other stakeholders such as the universities, co-production with students, NES, and host sites because they are impacted by initiatives. Participants believed that changes to the ways in which IPE and placements are provided would take time and extra resources. Participants also believed that it would require building in significant investment in course changes, staff capacity and training, pilot testing, and robust evaluation (Table 4, Quotations 10 and 11).

Influences on the development and implementation of IPE in EL: barriers and enablers

Our analysis identified that barrier and enabler themes could be considered as in line with socio-institutional definitions of the macro-, meso-, and micro-terminology. These definitions are predicated on the existence of complex interactions between determinants influencing organizational and individual behaviors, which may ultimately affect further educational innovation. This socio-institutional lens was used to consider the data in relation to barriers and enablers influencing advances in IPE in EL, and this is summarized in Table 5 along with supportive quotations. This approach has been adapted from van Van Wijk et al. (2019) and has been used in healthcare implementation studies (Mulvale et al., 2016; Smith et al., 2019).

Macro-level influences

Macro-barriers

At the macro level, the focus of stakeholders was on the structural and economic influences on development and implementation of IPE within practice-based settings. Macro-barriers highlighted by policy stakeholders included issues around funding continuity and allocation models. These barriers included resources for students to travel to host sites distant from their normal residence, which was recognized as an important aspect of the development model because it would allow the universities to expand placement opportunities.

Macro-enablers

Despite being highlighted as a potential barrier, not all interviewees noted lack of financial support for IPE in EL initiatives. Due to availability of medical and ACTp funding, one policy stakeholder noted that funding would not be an issue if it was properly allocated. The same policy stakeholder also highlighted that additional workload concerns could be ameliorated if funding was made available to recruit more staff to lead the development and delivery of initiatives.

Meso-level influences

Meso-barriers

Academic participants particularly highlighted experiences from previous involvement in on campus IPE activity. They reflected on logistical and planning difficulties as perceived barriers to developing IPE in general and extrapolated this to IPE in EL developments. They especially highlighted challenges around harmonization of timetabling EL placement activity between different universities and healthcare professional groups. An added perceived barrier identified by academic staff participants was that, during placements, students tend to observe rather than be given opportunities to have a more active role in care provision.

Meso-enablers

Participants articulated “organizational intelligence” from on campus-based IPE enabling IPE in EL. For instance, it was believed that IPE “pre-work” such as addressing preconceptions of roles and responsibilities of each member of the healthcare team in caring for patients could facilitate understanding of scope and purpose of IPE in general and that this in turn could engender engagement. A primary care participant believed that implementing IPE in EL could help students build on interprofessional communication skills formatively developed through classroom-based activity. Participants recognized that more could be done to develop and test new initiatives. Starting with small pilots of IPE within EL was highlighted as an enabler for implementation, as it can help showcase the benefits of this initiative, which can reduce resistance in the healthcare team.

Training both students and facilitators involved with IPE in EL was considered essential, as it can ensure that both parties get the most out of the placement. Enhancements to current training were identified as supporting facilitators because it was highlighted that currently they only receive standard NES training program on how to host students with limited aspects of IPE. The appropriate timing of training to ensure quality of support provided to students on placement was also noted by a GP practice-based participant.

Micro-level influences

Micro-barriers

The additional workload for practice-based staff for IPE in EL initiatives was highlighted by stakeholders. This could arise through the need for additional training, development of training materials, devising a schedule of training opportunities, supporting the student on placements, and/or providing feedback. This additional workload was a particular concern for community pharmacists, who have a need to ensure adequate “cover” for routine professional activities, in addition to facilitating routine placement work, and ensuring incorporation of IPE in EL initiatives in a largely uni-professional environment. However, community pharmacy stakeholders interviewed indicated that part of the solution to this issue was collaborating with colleagues of other professions in different settings and sharing the time spent with the students.

Table 5. Barrier and enablers for the development and implementation of interprofessional education in experiential learning placements.

Barriers	Illustrative Quotations	Enablers	Illustrative Quotations
<i>Macro – Perceived structural, legal, regulatory and economic external conditions that are beyond the influence of individual organizations or practitioners.</i>			
<ul style="list-style-type: none"> Anxieties around continuity of resource availability and allocation models 	<p>“We’ve got to ensure with ACT we don’t double fund. So, if someone is getting a payment for delivering for medicine, we don’t then give them . . . for pharmacy . . .” Policy Stakeholder 2</p>	<ul style="list-style-type: none"> Current availability of medical and pharmacy ACT government funding 	<p>“I think ACT will help . . . ACT money is now out there, and people are being employed on . . . ACT.” Policy Stakeholder 2</p>
<i>Meso – Local institutional factors and influences, as well as community issues that often characterize or define the parameters of service delivery.</i>			
<ul style="list-style-type: none"> Logistic and planning difficulties can complicate IPE in EL Culture of “observing not doing” in EL 	<p>“We’ve tried to do it [IPE in EL] . . . with the medical school and they were receptive to it, but the logistics just didn’t work . . . it is very, very difficult to do.” Academic Stakeholder 3</p> <p>“I think one of the biggest barriers . . . has been the traditional thought process that students will go and observe within a workplace and so often have not been able to do within the workplace, and that is changing.” Academic Stakeholder 1</p>	<ul style="list-style-type: none"> Campus based IPE helps understanding of roles and skills development and so collaborative practice Better preparation: through pilots and training 	<p>“I think when pharmacists become qualified and come into practice it’s really important that they understand their role as part of a multi-disciplinary team.” Policy Stakeholder 1</p> <p>“We [current practitioners] never were taught to speak to other healthcare professionals . . . communication is key and being able to build relationships and rapport with people . . . less stressful at the start of my career if I’d just been taught how to speak to another healthcare professional.” Primary Care Pharmacy Stakeholder 1</p> <p>“I’m not saying everybody’s going to be open arms appreciative . . . maybe just starting small piloting and then showing . . . how they’re benefitting from that experience.” Policy Stakeholder 2</p> <p>“[Students] would need to be prepared . . . need . . . facilitator notes . . . for reading and potentially also discussing it with the medical staff or nursing staff . . .” Primary Care Pharmacy Stakeholder 2</p> <p>“We had a NES range of learning training, which came the week after I had a student, which wasn’t really ideal, it would’ve been handier to have it earlier in the year.” Primary Care Pharmacy Stakeholder 3</p>
<i>Micro – Day-to-day practice and attributes or characteristics of individual practitioners and their practice environments that affect how services are delivered.</i>			
<ul style="list-style-type: none"> Additional workload for staff developing and implementing IPE in EL initiatives 	<p>“If that [IPE in EL activities] can be expanded to . . . nurses or addiction services . . . , then I think you absolutely would gain support from pharmacy staff, who then have less time doing the training stuff and more time doing their own work.” Community Pharmacy Stakeholder 2</p>	<ul style="list-style-type: none"> Facilitators can get professional satisfaction from supporting IPE in EL Shared supervision with other professions alleviates “burden” “Educational advantage” of IPE in EL leading to improved care 	<p>“. . . I always find it quite rewarding as well having students and passing my knowledge on to them as well so, it would benefit both ends.” Primary Care Pharmacy Stakeholder 3</p> <p>“The advantage of working within general practice is that we have doctors . . . nurses, who are so used to educating medical students, nursing students . . . to see kind of how GPs lead the consultations and how nurses do things, and it would widen their knowledge and experience.” Primary Care Pharmacy Stakeholder 3</p> <p>“A lot of them have taken those ideas with them and that confidence they’ve gained to allow them to develop professionally and deliver better care to patients.” Policy Stakeholder 5</p>

Note. ACT = Additional Cost of Teaching, EL = experiential learning, GP = General Practitioner, IPE = Interprofessional education, MDT = Multi-disciplinary Team, NES = NHS Education for Scotland, NHS = National Health Service.

Micro-enablers

A primary-care participant highlighted professional satisfaction from passing on knowledge to students and supporting their development. Capitalizing on opportunities for shared supervision of IPE in EL could allow multiple-healthcare professions to support students, which could lead to efficiencies and ease pressure on pharmacy staff allowing them to do their day job. A GP practice-based participant articulated that general practice host sites may be considered well suited for IPE in EL because they have multiple healthcare professionals with experience facilitating student placements.

A range of participants perceived an educational advantage of students being involved in IPE in EL through undertaking activities that could lead to more confidence and competence at earlier stages, better provision of care, and improved patient outcomes. This was a major driver for further implementation.

Discussion

We explored key stakeholders’ views in Scotland regarding the development and implementation of IPE in EL for student pharmacists. The key findings from the stakeholder interviews highlight the importance of building on strong IPE

foundations and overcoming logistic challenges through opportunistic IPE in EL while challenging existing ethos and culture around current EL practices. All stakeholders should be involved in co-production, training, piloting, and evaluation of curricular developments to address logistic barriers and enhance enablers. Workload management strategies that include shared supervision with other healthcare professionals could also enable developments. Stakeholders stressed the importance of continuity of funding and equity in models of allocation as important for the future success of IPE in EL developments.

Stakeholders recognized the importance of using existing IPE developments as a basis on which to build future IPE in EL. This may address challenges associated with logistics, resources, and the existing ethos and culture, which were perceived to be barriers. Logistic and resource challenges were identified by Jones et al. (2012), in an electronic survey of 116 US pharmacy colleges. They concluded that barriers to expansion arose from limitations on access to healthcare facilities and staffing. The building of IPE ethos and culture has been shown to be possible in a USA survey of members of faculty across three disciplines (Lash et al., 2014).

To assuage some of these challenges, the benefit of informal IPE in EL was explored by Kent et al. (2020), and they concluded that unplanned opportunities could offer a strategy for sustainability. This links directly to the sub-theme in this work around the need to value and grasp all IPE opportunities and find ways to develop culture and ethos of staff and students. Enhancing professional satisfaction is linked to this and was highlighted by interviewees as an enabler for IPE in EL developments. The positive link between organizational culture, interprofessional teamworking and job satisfaction has been shown in healthcare settings, and this is essential for high-quality care and clinical effectiveness (Körner et al., 2015).

Stakeholders noted only a few examples of current IPE within EL in the Scottish MPharm courses supporting a need for curricular development. Pilot activities were highlighted and support for incorporating new initiatives. Barr et al. (2005) proposed strategies for development of IPE including extra-curricular approaches and an integrated model that includes practice-based experiences. In Canada, an interprofessional enhancement approach integrates course content into existing placements for nursing, respiratory therapy, pharmacy, and physiotherapy students. The developers concluded that IPE can be added to clinical courses without completely restructuring curricula (Deutschlander et al., 2012). This approach may help build on existing IPE, integrate it into courses, and resolve some of the challenges related to logistics of course organization, faculty and student workload.

Interviewees noted that curricular development requires co-production with faculty and clinicians. Working together on IPE in EL is vital to success. Lash et al. (2014) showed that faculty members generally agreed that there were benefits of IPE on patient outcomes and that implementing IPE was feasible, but program level differences would need to be addressed including relative importance of IPE in busy curricula, need for more IPE, and level of organizational support. These differences link directly to the results of our study, particularly the concepts within Theme 1 Nature and

experience of current IPE in EL activities. Interviewees highlighted the importance of IPE in general but also the need to build it into curricula to demonstrate its relative importance.

El-Awaisi et al. (2018b) described work done in the Middle East, which has a different cultural context from much of the existing literature. They explored the perceptions of practising pharmacists in Qatar toward IPE and CP and concluded that they are ready and willing to develop based on existing relationships, but barriers included perceptions around hierarchy between professions and the current status and working practices of pharmacists. This highlights the importance of considering local geographical and organizational contexts. Relationship building within organizations through training could play a key part. Grace et al. (2016) studied an online resource to prepare students and supervisors for IPE placements and concluded that their collaborative project could create organizational culture change.

Organizational culture change should also include consideration of collaborative workload management strategies including shared supervision, considered an enabler for developments by stakeholders in our work. They highlighted the expected benefits of staff training and collaborative working in managing workload relating to planning placements and supporting students. It is likely that future development of IPE in practice-based settings will be contingent on approaches to collaborative work on curriculum development and shared supervision of students in implementation. Kent et al. (2018) showed that in addition to the known traditional challenges it is important to free up time for teams to train, develop, and deliver programs together.

Lastly, influencers at a macro-level are particularly important. Development of a strategic vision and leadership framework that values and supports IPE in EL innovation is likely to be crucial for progress. Lawlis et al. (2014) identified key elements for developing sustainable IPE, which included: organizational structures, staff training and buy in. The stakeholders in this work recognized the need for consideration of funding continuity and models of allocation to develop IPE in EL. Securing funding can be considered vital for innovative that include implementation, evaluation, and further development. Jones et al. (2012) explored IPE in US colleges and schools of pharmacy to assess the extent of incorporation of IPE into introductory pharmacy practice experiences (IPPEs). Just over half (55%) had IPE within practice experiences; a key barrier included lack of appropriate healthcare facilities and staffing (Jones et al., 2012). Further, Lawlis et al. (2014) identified that there is limited information on the sources and availability of funding for initiatives in the literature, but funding was one of five key elements for development of sustainable IPE.

A strength of this work was the qualitative approach to data generation, which allowed for in-depth exploration of participants' views and ideas. Moreover, it allowed key pharmacy stakeholders from different settings in Scotland to ensure that the findings represent the broad Scottish context. These stakeholders are also involved in and have influence on the planning and delivery of EL, and they are key to future developments. The main limitation of this study is that data were generated in Scotland, hence the findings may lack transferability to other

countries. However, given the similarities in accreditation standards in many countries, this may not be an issue. Detailed description of the research methods, setting, and participants were included to permit readers to consider the likely transferability of the research data to their own context. Many of those interviewed did not have direct, current IPE or IPE in EL experience. It is possible that they were espousing views related to their own work experience in general rather than specifically related to supporting students in IPE in EL settings.

Based on these findings it is recognized that there is opportunity to build on IPE foundations within pharmacy curricula in Scotland with further development of IPE in EL. However, due consideration is required to enhance enablers and mitigate barriers to such development. Future researchers should explore the best approaches to integration of IPE in EL into existing models and develop a strategic framework for its implementation within pharmacy education.

Conclusion

Interviews with pharmacy stakeholders highlighted that the majority of IPE currently undertaken in Scotland is classroom-based. However, there is support to develop and deliver IPE within EL. Some enablers and barriers were noted, particularly implementation issues and the linked funding, which highlights the need for careful planning of these activities.

Acknowledgments

The research team would like to thank Redballoon PA for their transcribing services, Dr Antonella Tonna, and Mrs Laura Karim for their help with the analysis.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This study was funded by NHS Education for Scotland

References

- Accreditation Council for Pharmacy Education. (2015). *Accreditation standards and key elements for the professional program in pharmacy leading to the Doctor of Pharmacy degree [internet]*. <https://www.acpe-accredit.org/pdf/Standards2016FINAL.pdf>
- Archibald, M. M., Ambagtsheer, R. C., Casey, M. G., & Lawless, M. (2019). Using Zoom videoconferencing for qualitative data collection: Perceptions and experiences of researchers and participants. *International Journal of Qualitative Methods*, 18, 1–8. <https://doi.org/10.1177/1609406919874596>
- Barr, H. (2015). *Interprofessional education - The genesis of global movement*. <https://www.caipe.org/resources/publications/barr-h-2015-interprofessional-education->
- Barr, H., Koppel, I., Reeves, S., Hammick, M., & Freeth, D. (2005). *Effective interprofessional education - Argument, assumption and evidence*. Blackwell Publishing. <https://onlinelibrary.wiley.com/doi/pdf/10.1002/9780470776445.fmatter>
- Canadian Council for Accreditation of Pharmacy Programs. (2020). *Accreditation standards for Canadian first professional degree in pharmacy programs*. July 2018 (Revised 2020). <https://ccapp.ca/wp-content/uploads/2020/10/July7-CCAPP-Professional-Standards-ENG.pdf>
- Centre for the Advancement of Interprofessional Education. (2002). *Interprofessional education - Today, yesterday and tomorrow [internet]*. Higher Education Academy (Learning & Teaching Support Network for Health Sciences & Practice. <https://www.caipe.org/resources/publications/caipe-publications/caipe-2002-interprofessional-education-today-yesterday-tomorrow-barr-h>
- Cerra, C., Drake, D., Sick, B., King, J. A., Chesney, M., & Lutfiyya, M. N. (2015). Building the foundation for culture change through the design, implementation, and assessment of an interprofessional education intervention. *Journal of Nursing Education and Practice*, 5(1), 46–57. <https://doi.org/10.5430/jnep.v5n1p46>
- Deutschlander, S., Suter, E., & Lait, J. (2012). Models in interprofessional education: The IP enhancement approach as effective alternative. *Work*, 41(3), 253–260. <https://doi.org/10.3233/WOR-2012-1293>
- El-Awaisi, A., El Hajj, M. S., Joseph, S., & Diack, L. (2018b). Perspectives of practising pharmacists towards interprofessional education and collaborative practice in Qatar. *International Journal of Clinical Pharmacy*, 40(5), 1388–1401. <https://doi.org/10.1007/s11096-018-0686-9>
- El-Awaisi, A., Joseph, S., El Hajj, M. S., & Diack, L. (2018a). A comprehensive systematic review of pharmacy perspectives on interprofessional education and collaborative practice. *Research in Social and Administrative Pharmacy* 14(10), 863–882. <https://doi.org/10.1016/j.sapharm.2017.11.001>
- Francis, J. J., Johnston, M., Robertson, C., Glidewell, L., Entwistle, V., Eccles, M. P., & Grimshaw, J. M. (2010). What is an adequate sample size? Operationalising Data Saturation for Theory-based Interview Studies. *Psychology & Health*, 25(10), 1229–1245. <https://doi.org/10.1080/08870440903194015>
- General Pharmaceutical Council. (2021). *Standards for the initial education and training of pharmacists*. <https://www.pharmacyregulation.org/sites/default/files/document/standards-for-the-initial-education-and-training-of-pharmacists-january-2021.pdf>
- Grace, S., McLeod, G., Streckfuss, J., Ingram, L., & Morgan, A. (2016). Preparing health students for interprofessional placements. *Nurse Education in Practice*, 17, 15–21. <https://doi.org/10.1016/j.nepr.2016.02.001>
- Grice, G. R., Thomason, A. R., Meny, L. M., Pinelli, N. R., Martello, J. L., & Zorek, J. A. (2018). Intentional interprofessional experiential education. *American Journal of Pharmaceutical Education*, 82(3), 204–208. <https://doi.org/10.5688/ajpe6502>
- Guba, E. G. (1981). Criteria for assessing the trustworthiness of naturalistic inquiries. *Educational Communication and Technology Journal*, 29(2), 75–91. <https://doi.org/10.1007/BF02766777>
- Herath, C., Zhou, Y., Gan, Y., Nakandawire, N., Gong, Y., & Lu, Z. (2017). A comparative study of interprofessional education in global health care: A systematic review. *Medicine (Baltimore)*, 96(38), e7336. <https://doi.org/10.1097/MD.0000000000007336>
- Howitt, D. (2016). *Introduction to qualitative research method in psychology* (3rd ed.). Pearson Education Limited.
- Illingworth, P., & Chelvanayagam, S. (2017). The benefits of interprofessional education 10 years on. *British Journal of Nursing*, 26(14), 813–818. <https://doi.org/10.12968/bjon.2017.26.14.813>
- Janghorban, R., Latifnejad Roudsari, R., & Taghipour, A. (2014). Skype interviewing: The new generation of online synchronous interview in qualitative research. *International Journal of Qualitative Studies on Health and Well-being*, 9(1), 1–3. <https://doi.org/10.3402/qhw.v9.24152>
- Jensen, E. A., & Laurie, C. (2016). *Doing real research: A practical guide to social research* (1st ed.). Sage Publications.
- Jones, K. M., Blumenthal, D. K., Burke, J. M., Condren, M., Hansen, R., Holiday-Goodman, M., & Peterson, C. D. (2012). Interprofessional education in introductory pharmacy practice experiences at US Colleges and Schools of Pharmacy. *American Journal of Pharmaceutical Education*, 76(5), 1–9. <https://doi.org/10.5688/ajpe76580>
- Kent, F., Glass, S., Courtney, J., Thorpe, J., & Nisbet, G. (2020). Sustainable interprofessional learning on clinical placements: The value of observing others at work. *Journal of Interprofessional Care*, 34(6), 812–818. <https://doi.org/10.1080/13561820.2019.1702932>

- Kent, F., Nankervis, K., Johnson, C., Hodgkinson, M., Baulch, J., & Haines, T. (2018). 'More effort and more time.' Considerations in the establishment of interprofessional education programs in the workplace. *Journal of Interprofessional Care*, 32(1), 89–94. [10.1080/13561820.2017.1381076](https://doi.org/10.1080/13561820.2017.1381076)
- Körner, M., Wirtz, M. A., Bengel, J., & Göritz, A. S. (2015). Relationship of organizational culture, teamwork and job satisfaction in interprofessional teams. *BMC Health Services Research*, 15(243), 1–12. <https://doi.org/10.1186/s12913-015-0888-y>
- Lapkin, S., Levett-Jones, T., & Gilligan, C. (2013). A systematic review of the effectiveness of interprofessional education in health professional programs. *Nurse Education Today*, 33(2), 90–102. <https://doi.org/10.1016/j.nedt.2011.11.006>
- Lash, D. B., Barnett, M. J., Parekh, N., Shieh, A., Louie, M. C., & Tang, T. T. (2014). Perceived benefits and challenges of interprofessional education based on a multidisciplinary faculty member survey. *American Journal of Pharmaceutical Education*, 78(10), 1–9. <https://doi.org/10.5688/ajpe7810180>
- Lawlis, T. R., Anson, J., & Greenfield, D. (2014). Barriers and enablers that influence sustainable interprofessional education: A literature review. *Journal of Interprofessional Care*, 28(4), 305–310. <https://doi.org/10.3109/13561820.2014.895977>
- Lawlis, T., Wicks, A., Jamieson, M., Haughey, A., & Grealish, L. (2016). Interprofessional education in practice: Evaluation of a work integrated aged care program. *Nurse Education in Practice*, 17, 161–166. <https://doi.org/10.1016/j.nepr.2015.11.010>
- Lobe, B., & Morgan, D. L. (2021). Assessing the effectiveness of video-based interviewing: A systematic comparison of video-conferencing based dyadic interviews and focus groups. *International Journal of Social Research Methodology*, 24(3), 301–312. <https://doi.org/10.1080/13645579.2020.1785763>
- McCloskey, A. P., Brown, J., Haughey, S., & O'Hare, R. (2019). Pharmacy student and pharmacist perceptions of professional socialism and communication in a real-life clinical setting. *International Journal of Pharmacy Practice*, 27(3), 286–294. <https://doi.org/10.1111/ijpp.12493>
- Mulvale, G., Embrett, M., & Razavi, S. D. (2016). 'Gearing Up' to improve interprofessional collaboration in primary care: A systematic review and conceptual framework. *BMC Family Practice*, 17(83 1–13). <https://doi.org/10.1186/s12875-016-0492-1>
- Murray-Davis, B., Marshall, M., & Gordon, F. (2012). From school to work: Promoting the application of pre-qualification interprofessional education in the clinical workplace. *Nurse Education in Practice*, 12(5), 289–296. <https://doi.org/10.1016/j.nepr.2011.10.009>
- Oandasan, I. (2015). Changing organizational culture to embrace interprofessional education and interprofessional practice. In C. Orchard (Ed.), *Interprofessional client-centred collaborative practice*(67–82). Nova Science Publishers, Inc.
- Olson, R., & Bialocerkowski, A. (2014). Interprofessional education in allied health: A systematic review. *Medical Education*, 48(3), 236–246. <https://doi.org/10.1111/medu.12290>
- Rodger, S., & Hoffman, S. J., & on behalf of the World Health Organization Study Group on Interprofessional Education and Collaborative Practice. (2010). Where in the world is interprofessional education? A global environmental scan. *Journal of Interprofessional Care*, 24(5), 479–491 [doi:10.3109/13561821003721329](https://doi.org/10.3109/13561821003721329). <https://doi.org/10.3109/13561821003721329>
- Smith, T., McNeil, K., Mitchell, R., Boyle, B., & Ries, N. (2019). A study of macro-, meso- and micro-barriers and enablers affecting extended scopes of practice: The case of rural nurse practitioners in Australia. *BMC Nursing*, 18(14), 1–12. <https://doi.org/10.1186/s12912-019-0337-z>
- van Wijk, J., Zietsma, C., Dorado, S., de Bakker, F. G. A., & Martí, I. (2019). Social innovation: Integrating micro, meso, and macro level insights from institutional theory. *Business & Society*, 58(5), 887–918. <https://doi.org/10.1177/0007650318789104>
- World Health Organisation. (2010). *Framework for action on interprofessional education & collaborative practice [internet]*. Author. <https://www.who.int/publications/i/item/framework-for-action-on-interprofessional-education-collaborative-practice>