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Karen Kyne & Aileen Barrett

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RESEARCH ARTICLE



Crisis, change and the future for teaching and learning in general practice

Karen Kyne and Aileen Barrett

Clinical Lecturer in the Department of General Practice, Royal College of Surgeons in Ireland (RCSI), Dublin, Ireland

ABSTRACT

Objectives: The aim of this study was to explore the decisions and decision-making strategies employed by academic GPs tasked with adapting the delivery of undergraduate general practice education curricula to virtual platforms during the Covid-19 pandemic. We sought to investigate how their experiences of this adaptation might influence the development of future curricula.

Methods: Recognising our 'insider' positions and constructivist paradigm preferences, we approached the study from a constructivist grounded theory (CGT) perspective and participants participated in semi-structured interviews.

Results: Nine participants from three university GP departments in Ireland described the transition to online delivery of the curriculum as a 'response approach'. Participants described seeking collaboration both within and between institutions. The value and limitations of student feedback as a driver for change differed between participants and recognised the impact of limited social engagement between peers on social determinants of learning. Participants with prior experience in e-learning were inclined to recommend some level of continuation. Two institutions plan to continue to incorporate aspects of blended learning.

Conclusion and implications: All participants recognised a level of value (efficiency, social engagement and continuity) in online learning, they were less clear on the specific educational value and impact of this (e.g. on knowledge, skills and attributes). We need to consider which elements of undergraduate education can be delivered effectively online. Maintaining the socio-cultural learning environment is of critical importance but must be balanced by efficient, informed and strategic educational design.

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Introduction

eLearning is not new to medical education. Asynchronous content has long been in practice to supplement learning delivered in a face-to-face setting [1,2] but until now, has more commonly been used in basic sciences education rather than in a clinical setting [3,4]. Prior to 2019, limited guidance was available on the extent of its role in learning in a clinical setting, either as an adjunct or a replacement approach.

Clinical placements have been used to give medical students exposure to patients[5], providing valuable learning opportunities for students in developing their clinical, communication and clinical reasoning skills[6]. It has been assumed, that these skills would be difficult to acquire in the absence of exposure to real-life patients [7]. Through being immersed in the clinical environment over time, medical students become more active participants [8,9]. Socio-cultural theories, including the well-known communities of practice theory, have allowed us to understand the social context of learning during clinical placements [8,10], and it is accepted that

student learning is developed through observing, participating, and communicating in the clinical environment [11,12].

The role and value of e-learning in clinical placements has been a subject of discussion for many years. However, in 2020, it became the sole method available to clinical educators and was therefore 'tested' in an unprecedented way, driven by crisis. Now, two years later, almost every educator has had experience of eLearning platforms, methods and tools. Rather than being grounded in a strategic quality improvement plan, this change was forced upon educators without the consultation and stakeholder engagement usually needed to successfully design, negotiate and implement change[13]. While educators in all professions, disciplines and programmes of study felt the burden of accepting this change, in this study, we have attempted to start this conversation in our own context of undergraduate general practice in Ireland.

Clinical placements in general practice are an established component of the medical degree across the island of Ireland, although the amount of time spent

in general practice varies widely across programmes. Students prepare for general practice placements with traditional lectures and tutorials. As an example, in our context, fourth year students spend four weeks in general practice supported by one week of in-house teaching, a mix of online and face-to-face prior to going on placements. They receive one day per week of teaching either in person and online teaching during their placement weeks. The assessment consists of a Single Best Answer paper and submission of an electronic portfolio.

What happens when we cannot access this essential learning environment? How can we continue to provide clinical education that will serve our graduates as they enter practice? In this study, we aimed to learn how virtual placements have shaped educators' perceptions of the value of this alternative approach. Our research question was: 'how did undergraduate general practice educators experience the change to online learning, and how has this shaped their perceptions of potential change for the future?'

Methods

Context

In response to Covid-19, undergraduate clinical placements were suddenly replaced by online learning in the form of seminars, case discussions and role-plays[14]. Flipped classroom approaches were used by asking students to watch videos in advance of the session and then participating in a facilitated question and answer sessions afterwards [15,16]. Others used an asynchronous approach, assigning projects to students[17]. While this enabled a certain level of learning to continue, it was recognised that it may not be possible to replicate many aspects of workplace learning in the virtual environment [15,18].

Study design

The aim of the study was to explore how undergraduate GP departments adapted their curriculum during the pandemic, the challenges they faced and how future GP curricula may evolve. We chose to explore GP academics' narratives and experiences using a qualitative methodology.

The specific objectives were:

- (1) To explore how the content and delivery of a new curriculum was designed
- (2) To identify challenges faced by academic GP departments and how these were mitigated
- (3) To explore the impact of these new curricular innovations on future curricula

Methodological approach

As a relative 'insider researcher' (KK), and as a team with a shared paradigmatic perspective on the constructivist nature of reality and knowing, we developed a constructivist grounded theory design for this study. In particular we recognised the influence of experience on perceptions and how each individual's 'truth' of pandemic-era education was likely to vary from context to context.

Methods

Following ethical approval, faculty from academic GP departments of three institutions were recruited with the assistance of a gatekeeper from the Association of University Departments of General Practice in Ireland (AUDGPI), an all-island organisation that supports and promotes research in primary care education. Semi-structured interviews (via an online platform) allowed us to explore participants' experiences of online delivery of undergraduate education and to understand the decision-making approaches they used to devise their virtual and/or blended curricula[19]. Written informed consent was obtained from all participants for publication of the anonymised findings.

Data collection and analysis

Individual semi-structured interviews via Zoom© were conducted from March to July 2021. A pilot interview was reviewed by both researchers and the interview guide was amended to better address the research question[19]. KK conducted all interviews which were audio-recorded and transcribed verbatim without any identifiers. Participants were offered the opportunity to review their transcript for accuracy before data analysis [20–22]. Audio-recordings were permanently deleted after interviews were transcribed. After each interview, findings were discussed and iterative changes were made to the interview schedule. Data collection and analysis occurred simultaneously and influenced each other[19].

Interview transcripts were coded manually using the three stages of constructivist grounded theory (CGT) coding: initial, focused and theoretical coding. Each interview transcript was coded line-by-line and there was a constant comparative analysis throughout of the codes with memos and categories generated [19,23,24]. Newer interview data were compared and contrasted with previous data collected. During focused coding, the data were grouped with the most frequent codes identified. Both researchers coded the transcripts independently and compared their coding approaches [25]

Results

Nine participants were interviewed from March to July 2021, during which time universities continued to operate under strict Covid-related guidelines with limited on-site teaching supplemented by online education. Four themes were identified as in Table 1.

Table 1. Four key themes.

Designing the virtual GP curriculum
Challenges
Evaluations
Future GP curricula

Designing the virtual GP curriculum

Participants described their experience of their initial virtual curriculum design as a response approach, with a focus on finding solutions to the elimination of on-site placements. Virtual delivery of the curriculum occurred overnight in response to the cancellation of face-to-face teaching and clinical placements. There was little time to plan or devise new materials, but existing course material needed to be adapted to an online format.

'I realised that quite quickly I wasn't going to be able to create a load of digital content for them so I tried to curate what was already out there' (GP5)

Participants articulated their scepticism about whether it would be possible to replicate learning in a clinical setting using technology.

'What are we going to do here, . . . teach them some general practice without ever seeing a patient?' (GP5)

Later response and planning for the next academic year

During the Summer of 2020, most participants reported that planning meetings were held in preparation for the next academic year. They prioritised the key areas of the curriculum that they felt medical students should learn.

'worked over the summer on really fine-tuning each session and what needs to get across' (GP2)

Sessions were planned in such a way that they could be delivered both face-to-face and in person.

'We had 2 contingencies, one if everything was online and one if we were allowed face to face' (GP9)

Participant's reflected upon what was achieved in response to the sudden cancellation of placements and face-to-face sessions when devising the new virtual 2020–

2021 curriculum. Quickly realising that placement duration for this academic year would be significantly reduced, they considered what medical students learn on placements. It became clear that gaps existed in the knowledge of medical education and only certain aspects of clinical placements would be possible to replicate.

'reflect on what we had achieved . . . then as a group to say okay what next' (GP1)

'will never be able to completely replicate what happens in practice . . . kind of realised that there is a bit of vacuum in that of our knowledge of clinical education' (GP3)

New initiatives were then designed including the integration of patient vignettes and discussions. Although all three institutions devised patient vignettes, they differed in their approach between synchronous, asynchronous or face-to-face format. Case-based discussions were used in two institutions, facilitated by external sessional GP's which were delivered remotely.

Remote consultation skills

Consultation skills sessions were delivered remotely. Feedback from students was very positive in one institution: where the students' preference was to continue with remote communication skills teaching in the future.

'It just ran so much better, it was also just so much more efficient in terms of use of resources, the simulated patients' (GP6)

In another institution, the participant voiced concerns over the loss of the opportunity to provide feedback to students on non-verbal aspects of communication. The preference was to return to face-to-face communication skills teaching.

'you miss out on a little bit on the body language because it's on zoom'

'I would like to see it going back to face to face but again' (GP9)

Collaboration

The importance of collaboration within the institution and between institutions was regarded as helpful and expressed a desire for this to continue.

'AUDGPI was very helpful . . . we are all working in isolation a bit, so it was good . . . to see what other people were doing' (GP2)

Challenges

A secondary aim of the study was to identify the challenges faced by participants when adopting the new curricula and how these challenges were mitigated. Challenges with technology, Wi-Fi issues and inadequate hardware while working from home affected participants to varying degrees. We aimed to explore how they approached teaching and learning from a pedagogical perspective.

Technology

The adoption of technology for teaching occurred rapidly. Some participants had little prior experience in using online platforms, requiring additional hours getting accustomed to the virtual teaching environment and this increased workloads.

'It was very stressful and there were very long hours you know' (GP4)

Participants generally reported a sense of collegiality with a lot of informal help among them and expressed the viewpoint that they were all in it together.

'disseminating best practice amongst each other' (GP3)

'used our knowledge to inform others' (GP7)

Educational strategy

Challenging aspects of teaching online particularly when teaching larger groups of students included keeping students engaged and the moderation of chat boxes.

'Trying to actively manage a session is much more difficult in the online environment' (GP1)

'I would be talking and discussing something and the chat box would be going absolutely mental' (GP5)

Many of the participant's found delivering clinical skills sessions was more challenging compared to previous years. Wearing Personal Protective Equipment (PPE) and using mannequins under strict covid precautions whilst trying to maintain social distance meant that these sessions needed to be repeated multiple times. In response to this, educators gave students preparatory work and had more focused clinical skills sessions of shorter duration which worked well for the students.

'we are repeating a lot you know because the groups are so small' (GP4)

'really difficult to do the curriculum that I think we do well in GP, which is a lot of clinical skills' (GP8)

Some participants highlighted that smaller groups provide an excellent learning opportunity for students, but that it is a very labour-intensive way of delivering education when resources are limited.

'There is great value in these smaller classes and the more focused attention that we can give to students' (GP3)

Increased workload

The move to remote learning led to a significant increase in workload for participants, many of whom are also practising GP's.

'a lot of our teachers who were obviously clinicians . . . were tired and flattened' (GP3)

The workload was made more challenging as new issues arose regularly and rapid solutions needed to be devised.

'I would say every single day brought a couple of hours work on something, that I hadn't planned for' (GP7)

Cancellation of placements at the last minute

All participants recognised the challenge of securing GP placements for the students. A substantial number of GP tutors withdrew immediately. In one institution half of the tutors withdrew.

'always had a challenge getting them . . . I would say we lost half the GP's immediately' (GP2)

Placement time was reduced substantially in most institutions. Securing placements involved a lot of negotiations, trying to address and manage tutors' concerns.

'had to obviously negotiate with all these practices would they take students' (GP3)

Evaluations

Differences in opinion varied across the institutions on the value of student feedback and evaluations of this new virtual curricula.

'There wasn't really a whole lot of time to look back with any degree of thought' (GP7)

In one institution, they felt that the feedback was not too relevant or accurate in comparing a virtual placement with a traditional face-to-face placement.

'but again, it's hard to know, it's not comparing like and like with like' (GP9)

In another institution, there was a greater emphasis placed on feedback from students. They had been using course

feedback for several years to guide curriculum changes and omitting certain areas where students did not rate the session too highly.

'drop out some of the sessions that students didn't enjoy or didn't find useful' (GP6)

Two senior members within that academic department felt that the changes to curriculum could be evaluated more thoroughly.

'maybe we should have done that a lot more explicitly and more rigorously' (GP2)

In two institutions, participants spoke about how informal feedback during the year helped to monitor and ensure the new changes were going okay for the students.

'create a dialogue with students . . . that dialogue needed to be very constant' (GP3)

They emphasised the importance of having regular check-ins with the students.

'I felt they needed points of contact at least every couple of days' (GP5)

The problem with interpreting the student feedback was that there was a low response rate.

'we give them feedback forms which sometimes they come back' (GP4)

Overall, participant's commented that students appreciated efforts made by educators and particularly valued the face-to-face sessions.

'Students have been surprisingly positive' (GP5)

'they really craved the face to face' (GP8)

Participants noted that factual and knowledge-based teaching translated well to an online platform.

'lecture material translated well and anything that was very much knowledge-based and theory-based translated well.' (GP6)

See [Box 2](#) for what participants reported that worked well.

Box 2 Key aspects that worked well

Learner centric sessions online with Breaks, Tasks, Collaboration
Factual/Knowledge based material translated well online
Case based discussions
Small group teaching
Simulated GP surgeries
Remote communication skills teaching
Shorter more focused practical skills sessions

Future GP curricula

Blended Learning

Willingness to continue with teaching online varied among the participants. In two of the institutions, they could see a role for a blended approach to undergraduate education, while at the third institution, they wanted a return solely to face-to-face teaching.

'So, it's going to be a blend, . . . actually, as staff it works.' (GP1)

'overwhelming desire would be to do face to face.' (GP9)

There was a consensus among all participations that examination skills-based sessions should remain face to face.

Patient vignettes

Two of the institutions in the study planned to incorporate their versions of patient vignettes into future GP curricula, an example of curricular innovations created.

'really worked well and I think we should keep that' (GP4)

'I am going to keep them going even in post pandemic' (GP5)

One participant reflected that their patient vignettes surgeries allowed for the introduction of data interpretation, an area not traditionally taught, and plan to incorporate this into future curriculum.

'probably we don't teach students enough about laboratory investigation'

'useful to incorporated that into didactic teaching' (GP9)

Remote consulting

Feedback was positive in one institution among how remote communication skills teaching was conducted and they plan to continue this skills-based teaching remotely.

'I think remote consulting is going to be an important aspect, so we will continue on with that' (GP2)

Use of preparatory work

The use of preparatory work in advance of the clinical skills sessions allowed for a shorter session, more focused on practicing the skills and gave students opportunities to prepare questions they would like addressed.

'Clinical skills as I have said we certainly paired those back, I think they will stay paired back' (GP2)

Discussion

The experiences of academic GPs in Ireland are similar to those of many healthcare educators around the world [26]. These experiences provide an insight into how decisions were made around curriculum planning in a specific national context which will be important for the next era of health professions education design.

Adult learning theories and principles continually support the use of small group teaching and learning strategies, both from a social cognitive and sociocultural perspective, and provide the opportunity to engage in peer discussion e.g. facilitated case-based discussion. While participants did not articulate any familiarity with these theories during their interviews, the approaches to their online and blended learning engagement with students demonstrated some level of understanding of the importance of these theories.

Transitioning from face-to-face teaching to delivering online learning is both challenging and time-consuming[27]. Resistance from faculty is a well-recognised barrier to the implementation of online learning[28]. Clinical educators quickly learned new ways of teaching, technical skills[29], and upskilled to use the different online teaching platforms[30]. Training sessions improved educators' experience in the delivery of these virtual teaching sessions[31]. Participants' experiences of technical support and assistance at the universities varied considerably and impacted their initial perceptions of its benefits and their experience of this transition.

All participants commented on the sudden increase in workload as a result of this transition. Both students and educators need to receive appropriate training in how to use the virtual platforms[32]. The change to online teaching occurred rapidly among this cohort and allowing little time to prepare for the change.

Teaching online necessitates the use of different pedagogical approaches than used in a face-to-face environment [33] and requires educators taking on more of a facilitator role aligned to adult learning principles[34]. Appropriate educational approaches grounded in theory are required for online learning to be effective[35]. It is crucial to build rapport with learners and keep them engaged whilst drawing on their previous knowledge and experience to stimulate their intellectual development[36]. Where interactivity was prioritised in a virtual primary care setting, the learners found the sessions to be educationally worthwhile experiences [37]. Participants in the study who reported greater satisfaction with online teaching typically were more amenable to using the different information technology (IT) functions and when devising the lesson plans, they

tried to create learner-centric sessions with plenty of breaks, tasks and fostered a sense of collaboration of the learners in the online environment.

Recently published literature has indicated that individual and team creativity and resilience emerged whilst devising new ways of teaching [13,38]. Reconstruction of the face-to-face material to an online format required teamwork and good communication[32]. The importance of collaboration and innovation was noted among participants in this study.

Can online learning support clinical placement capacity issues?

Securing placements in GP for students is an ongoing issue and has been problematic in the UK for some time [39]. Difficulties were encountered in all three institutions in securing placements. In one institution, clinical placements were secured for some students in practices in the form of remote virtual GP placements. Two of the institutions had concerns about the future recruitment and retention of GP tutors.

Workload of general practitioners has increased substantially and this is a further deterrent to facilitating medical school placements. This will likely remain the case and may worsen after the pandemic. Good communication and interpersonal relationships have helped to retain GP tutors to date[40]. Clinical placements were secured during this period of crisis following extensive communication and negotiations with the GP tutors. Our findings indicate that placement capacity may be maintained, and possibly enhanced, where online teaching and learning can support clinical placement experiences e.g. case-based discussions in small groups may be better facilitated online than as part of the clinical placement or where students could be placed remotely for a clinical placement.

The majority of the participants identified their skills gap and learned through experimenting with the online platforms. Well-known barriers to the effective implementation of eLearning include lack of time, inadequate IT skills or hardware, insufficient institutional support and negative attitudes of staff towards eLearning[41]. These obstacles can be overcome through training of staff, appropriate funding and investment and dedicated time for staff to learn these new skills[42].

Role of the researcher

As an 'insider researcher'[43] I am aware of the influence this has on my choice of topic and research approach. I was able to conduct these interviews with empathy and understanding of their role in curriculum

change over the last year[19]. I recognised that my position might have been a barrier for recruitment in that participants might not be willing to share information with an academic GP from another institution.

My experience as an academic GP in the Royal College of Surgeons in Ireland during the pandemic

Teaching consisted of virtual placements, where students had weekly case based collaborate teaching sessions focusing on common cases seen in a GP setting. Students were given preparatory material to read in advance of the session and access to recorded lectures and a bank of sample cases. Currently, we deliver a mix of in person and virtual teaching sessions. Pre-pandemic we delivered all our teaching face to face. We deliver communication skills, consolidation sessions and three longitudinal integrated case discussions online. Clinical skills and reflection have remained face to face. Clinical case discussions were a new addition to the curriculum which has remained post pandemic.

Conclusion and implications

Concerns exist regarding the psychological well-being of students and staff due to lack of social interaction [44,45] and isolation of the learner as a result of the move to online learning [38,46]. There is a loss of in-person benefits like support and connection[31]. Two of the institutions in this study realised this and arranged regular check-in points for the students to come forward if they were struggling. As educational change is anticipated and designed, these social and personal factors need to be carefully considered and their impact on learner achievement further explored and understood. Participants in this study had varied perceptions of the benefits of student feedback on their teaching. The range of evaluation methods and strategies available to inform education design were not identified by this group. Meaningful evaluation, whereby decisions can be made about the future of an educational innovation, is a critical component of the design process. In this study we solely approached the design issues from the faculty perspective. For academic GP departments to more holistically and thoroughly inform their curriculum design, these strategies need to also include evaluations of learner engagement, experience and achievement. Box 3 gives further details of the conclusions and implications for practice from this research.

Box 3 Conclusions and Implications for practice

Participants with prior experience in e-learning were more likely to recommend it
There is a need for appropriate training and staff in basic e-learning principles
There is a need for more holistic evaluations including evaluations of learner engagement, experience and achievement
The importance and value of collaboration between and within institutions and participants expressed ongoing desire for this collaboration to continue
Concerns that this cohort of students may be less competent in communication and clinical skills due to reduced clinical exposure
The need to run catch up communication and skills based sessions for students with limited clinical exposure
Remote virtual GP placements may be an option where clinical placements are difficult to secure

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