

ORIGINAL RESEARCH

Do virtual placements work in nurse education? A cohort study into strengths and limitations

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Introduction

Undergraduate nursing education serves as the fundamental framework for fostering the development of clinical skills in students, with a particular focus on developing clinical reasoning skills and applying theoretical knowledge to clinical practice [1]. Undergraduate nurse educators have long held the view that clinical placements are the gold standard in nurse training for developing clinical skills [2]. Clinical placements are undertaken in clinical areas where experiences are spontaneous and unscripted, allowing students to apply theory to practice [3], practise practical skills, and make clinical decisions under the supervision and mentorship of Practice Supervisors and Practice Assessors [1]. In this context, the term ‘clinical skills’ refers to a range of skills including effective communication, history taking, clinical examinations, clinical reasoning, teamworking and professionalism [4,5].

Despite these long-held views about clinical placements, the unprecedented effects of the COVID-19 pandemic on healthcare education have seen growing popularity in the use of simulated placements. In the United Kingdom, evidence shows that undergraduate students from several healthcare professions undertook virtual placements during the pandemic to support the development of clinical skills. For example, Taylor et al. [6] created a virtual placement for dietetic students. They used learning outcomes from their professional standards document, ‘The British Dietetic Association’s (BDA) curriculum framework for the preregistration education and training of dietitians’ [7], to inform the filming of a simulated ward that was presented back to the students. As part of the placement, junior dietetic students watched these films and collaborated with senior students while completing associated online workbooks. Similarly, Robinson et al. [8] created a virtual placement aimed at improving communication skills for pathology students. Students were required to communicate and build rapport with a virtual patient that was embedded into a virtual reality platform. Following the 10-minute interaction, the students received structured feedback and guidance from tutors.

While the use of simulation-based education in nurse education predates the COVID-19 pandemic [9], the concept of using simulation as an alternative to clinical placements only became widely used during the pandemic when student nurse placement capacity was impacted [10]. During this period, the Nursing and Midwifery Council (NMC) introduced emergency standards that permitted up to 300 hours of virtual simulated placement hours to be counted as clinical placement hours [11,12].

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Simulation, including virtual simulation, uses a social constructivist pedagogical method [13,14]. Constructivist epistemology denotes that knowledge is a human construct, based on past and present experiences [15–17]. New knowledge is created and adapted through our social and cultural environment through an active process when meaning is attached to the concept [17,18]. In principle, simulation provides an opportunity for learning to occur using a well-established process [14]. First, the facilitator scaffolds learning necessary for the simulation by discussing or demonstrating knowledge and skills required during the pre-brief. Next, the facilitator briefs the students by creating a reality contract with the students that helps them to understand what is expected of them. To conclude the briefing, the facilitator presents the scenario that the students will undertake [17,19].

Following this, the simulation activity is undertaken and used as a trigger from which learning can take place [20]. This part of the process provides cognitive–sensorimotor memories that are used for further exploration of new knowledge to occur [20]. Finally, the new concepts are explored during the debriefing or feedback session. During this time, thought experiments are used to align the new learning with past experiences as well as other theoretical situations [21]. A thought experiment is a hypothetical scenario in which a theory, principle or concept is presented for the purpose of thinking through its consequences [21].

As Quail et al. [22] highlight, simulation allows training providers to facilitate the learning of specific knowledge and skills in a safe and controlled environment. There is growing

evidence suggesting that the combined use of clinical and simulated placements enhances undergraduate nurse training [23]. It is argued that clinical placements allow students to apply their learning in clinical practice, while simulated environments help to bridge the gap between theory and practice [9,24]. Within the virtual environment, students can practise problem-solving skills, receive immediate and targeted feedback, and scenarios can be repeated and practised as many times as required [25].

The aims of the study were to:

- Investigate students' perception of the strengths and limitations of learning in virtual and clinical placements.
- Explore whether the inclusion of simulated placements in undergraduate nurse education enhances the development of clinical skills.

Methods

A qualitative, exploratory research design comprising semi-structured interviews (Table 1) and a survey was used. Initial interviews gained an understanding of baseline beliefs surrounding clinical and virtual placements, while follow-up interviews discussed any changes in perception following the completion of respective placements. In this context, interviews were employed to investigate students' lived experiences, yielding rich qualitative data. Additionally, the online survey was used to elicit students' perspectives on the strengths of each placement and areas for improvement, thereby complementing and enriching the insights obtained from the interviews.

Table 1: Semi-structured interview questions

Initial interview questions	
Primary questions	Secondary questions
What do you think you will get from the virtual/ clinical placement?	What can you predict the virtual/ clinical placement to be like? What do you think you will learn from this placement?
What do you think will work during the placement?	What do you think are the strengths of virtual/ clinical placement? What do you think will be the advantages of doing a virtual/ clinical placement?
What do you think will be the limitations?	What do you think are the limitations of virtual/ clinical placement? What do you think will be the disadvantages of doing a virtual/ clinical placement?
What do you think you will take forward in your practice?	What knowledge or learning from this placement do you think you will use in future clinical placements?
Follow-up interview questions	
Primary questions	Secondary questions
What did you get from the virtual/ clinical placement?	What did you learn in the placement? What were the benefits of the placement?
What went well?	What were the strengths of the placement? What were the advantages compared to other areas?
What were the limitations?	What were the limitations of the placement? What were the disadvantages?
What will you take forward to clinical practice?	What knowledge or learning from this placement do you think you will use in future clinical placements? What skills will you take to future placements? What behaviours will you take to future placements? How has this placement supported future placements?

Purposive sampling was used by emailing a participant information sheet and a consent form to 74 second-year nursing students who had undertaken either a clinical or an online virtual placement. Fifteen students participated in initial interviews and 13 participated in follow-up interviews. The online survey was the university's End: a student satisfaction questionnaire sent to all students on completion of each learning module. However, due to a misunderstanding on the feedback being sought, data from the clinical placement survey could not be used. This is because student responses did not relate to clinical practice. As a result, only data from the virtual placement survey was used, totalling 18 responses out of the 25 students who undertook the virtual placement.

Clinical placements were undertaken between May 2021 and July 2021 in various primary and secondary care clinical areas. The virtual placement was undertaken online between June 2021 and July 2021. The first author was the primary facilitator of the virtual placement. Students worked in small groups daily, while some activities required all 25 students on the virtual placement to collaborate as a larger group. Placement activities started with a thorough pre-brief that ensured that students had the necessary knowledge to conduct the clinical reasoning required for each day's immersive simulation. The immersive simulations required participants to manage a busy clinical setting using a variety of technologies and multimedia such as interactive videos, audio files, breakout rooms with service users (actors) and filing cabinets with patient notes. Following each immersive simulation, students were invited to complete reflective accounts relating to what they learnt. Each virtual day concluded with a debrief that brought the learning together through an exploration of the clinical reasoning processes undertaken by the students. A detailed overview of the virtual placement has been published [26].

The placement was designed during the COVID-19 pandemic, supported by emergency standards [27], which permitted 300 hours of clinical placement to be replaced with simulation. The aim of the placement was to prepare students for clinical practice by focusing on the application of theory to real-world scenarios, thereby promoting the development of clinical reasoning skills. To achieve this, the placement structure was based on learning outcomes derived from university theory modules and was carefully aligned with the NMC's future nurse proficiencies [26].

Data analysis and synthesis

An interpretivist approach was employed as each participant had a unique experience of the placement. Individual perspectives within both clinical and virtual placements were shaped by distinct contextual factors, social interactions, as well as participants' previous experiences and cultural backgrounds. Data analysis and synthesis were undertaken by both authors to mitigate bias in analysis, following Clarke and Braun's [28] six-stage thematic analysis. Researcher reflexivity was also considered throughout the coding process, as suggested by Braun and Clarke [29]. As the

coding process uses the perspectives of the researchers, acknowledging positionality and potential impact on analysis, one aims to mitigate personal biases. Data were organized, analysed and stored using NVivo12 [30]. Interviews were conducted by the first author via Microsoft (MS) Teams. To mitigate researcher bias, the interviewer avoided leading questions and maintained neutrality. Interviews were automatically transcribed verbatim by MS teams and read through by the author to check for accuracy. Coding was undertaken by the first author as they became immersed in the data [28,31]. A coding manual was created, and coding checks were carried out by the second author [32]. Following the process of refinement and critical discussion between authors, four themes were identified. Table 1 presents subthemes and themes that were identified.

Ethical considerations

Ethical approval for the study was granted by the University's Health, Exercise, and Sports Science Ethics Committee. Anonymity was maintained using numerical codes assigned to each participant. Consent was obtained using a signed consent form.

Results

Results from the study (Table 2) are presented under the following themes and subthemes:

- Learning support
 - Some environments were welcoming:
 - *'they were really just willing to support my learning...'*
 - While staff was distant in other environments:
 - *'There's people that I've worked with ... that really give off the impression they don't hide, that they're not interested in students, and they don't want to work with students.'*
- learning opportunities
 - Clinical placement was spontaneous and the demands of the ward impacted the student experience:
 - *'I just feel like they have no time to teach me anything.'*

Table 2: Themes, subthemes and codes

Themes	Subthemes
Learning support	Welcoming staff
	Distant staff
Learning opportunities	Spontaneous opportunities
	Simulated opportunities
Learning experience	Feeling like a student
	Feeling like a nurse
Reflective practice	Reflection-in-action
	Reflection-on-action

- The virtual placement was simulated - the learning was targeted and predetermined:
 - *'So actually being given the chance to look from the [...] outside point of view, analyse it, break it down to a point where I thought this cannot be break down further'*
 - *'You don't have a patient to be hands on.'*
- Learning experience
 - Participants felt like a 'student' in the virtual placement and some clinical placements:
 - *'you're not going to be taken accountable or responsible for that mistake. So, therefore, you are free to go and make it [the decision] and see what happens. And put it back in a backpack and use it [the learning] later on.'*
 - Meanwhile, they felt like a 'nurse' in clinical placements, undertaking nursing tasks, in a clinical setting:
 - *'So I'll be able to learn a lot of things relevant to the placement and how the world works'*
- Reflective practice
 - Students adopted reflection-in-action during clinical placement:
 - *'they all just methodically work through it [a patient deterioration], not being so overwhelmed, actually, definitely just in general, because of their sense of calm.'*
 - In comparison, students in clinical placement often did not have time after an event, unlike in the virtual placement where they reflected-on-action:
 - *'It helps me to adopt a slow system 2 thinking with having time to logically investigate patient's situation and discuss within group of peers.'*

Learning support (welcoming versus distant staff)

In relation to both clinical and virtual learning environments, learning support was described in the context of how staff were welcoming, enthusiastic and accepting of students, as well as their accessibility and willingness to spend time with students. Learning support within clinical environments was described as variable. The best learning support was described in relation to friendly and supportive staff, especially when practice assessors were enthusiastic in their role as assessors:

'She was fantastic. And I think her enthusiasm, they all kind of like rubbed off on everybody else as well.' (P6)

Students also described how welcoming teams who valued students as individuals provided good learning support:

'they called me by my name ...' (P6)

'they were so nice and they were really just willing to support my learning.' (P11)

The lack of learning support in clinical learning environments was described in the context of students

feeling like an inconvenience and unwanted presence in the clinical area:

'There's people that I've worked with that are not necessarily my assessors/ supervisor that really give off the impression they don't hide, that they're not interested in students, and they don't want to work with students.' (P2)

Students also described occasions of poor guidance or instructions being given for an assigned task, with no one to go to for assistance or clarification on what to do:

'I think I was just sort of like thrown in there when no one told me what I was doing. And I was like, I have no idea what I'm doing.' (P9)

In contrast to the above, the virtual learning environment was described as offering good learning support. Students attributed the success of the virtual placement to the dedication, attentiveness and enthusiasm of placement tutors:

'I must state that this has only been possible due to the tutors delivering the module and their active and sincere intention of teaching us the best outcome.' (Survey response)

'[the lead tutor] has been incredibly supportive. Her enthusiasm is brilliant and she welcomes discussions.' (Survey response)

In situations where clarity was needed, or timely feedback required, placement tutors were described as accessible and readily available to engage with students:

'And if we went off into all groups and didn't quite understand something, we could always pop back into the rooms and just be like, can you just clarify this bit of information' (P15)

Overall, the virtual learning environment was described as providing good learning support.

Learning opportunities (spontaneous versus simulated opportunities)

Learning opportunities were identified as varied and nuanced within both the clinical and virtual learning environments. Clinical learning environments were described as spontaneous, owing to the dynamic and unscripted nature of clinical practice. As a strength, students described clinical placements as offering numerous opportunities to practise clinical skills in the real world:

'I felt like I was able to practise lots of new skills.' (P5)

Students also described these placements as offering opportunities to observe the performance of key skills by experienced staff in the real world:

'I went to the clinic and although I didn't necessarily like do it myself, I... got to see how they would.' (P11)

Nevertheless, limitations to learning opportunities were discussed in relation to fast paced clinical environments where staff were overwhelmed by their workload:

'I just feel like they have no time to teach me anything.' (P9)

'You're working flat out and actually you're not learning anything new.' (P10)

Indeed, these negative feelings were exacerbated when students felt like they were being used as support staff. In this context, learning opportunities were perceived as limited to performing tasks that were essential to the running of a busy clinical area, as opposed to supporting student learning:

'I felt like I'm doing a 12-and-a-half-hour shift as a healthcare assistant, and that's not what I'm here for.' (P6)

'I remember on one of my placements, they didn't have enough nurses. And I remember them saying to me, I know you're a student, but you've been in there all day, you can carry on.' (P16)

The virtual learning environment was largely described as artificial and yet provided students with collaborative learning opportunities that promoted in-depth comprehension of essential clinical skills. As a strength, some students described virtual placements as offering them an opportunity to engage in deeper learning while enhancing their knowledge of clinical skills:

'So actually being given the chance to look from the [...] outside point of view, analyse it, break it down to a point where I thought this cannot be break down further' (P13)

Students also described how virtual placements improved their understanding of how to perform clinical skills, including interpreting blood results, admitting patients and discharging complex patients:

'It's not just the theory [that I understand more of], but even the [doing of] practical things.' (P14)

Teamwork and collegiality were also promoted through simulated collaborative learning opportunities with students describing peer-to-peer learning and enhanced peer relations:

'This online placement has meant I have developed my relationships with others on my course who I have not seen in person since Covid and has helped my teamwork skills and working collaboratively' (Survey response)

Limitations to learning opportunities were discussed in the context of a lack of hands-on practical application of taught skills, as well as technical constraints caused by internet connection challenges and a lack of face-to-face interaction. Some students described how the absence of real patients in virtual scenarios limited their learning:

'You could probably learn to a certain point and then would have to stop because you don't like scenarios. I just think you need real people and real scenarios' (P11)

'You don't have a patient to be hands on.' (P10)

'[not] being hands on, basically not being physically -- not actually seeing the patients' (P14)

Other students described how poor internet connection and the online environment impacted on opportunities to

practise practical skills and be wholly engaged in teamwork and effective communication:

'The group work online is a challenge as it is not natural, and you will always get someone who talks more than others and this does not and should not reflect on their "real life" abilities and skills.' (Survey response)

'technical issues, if internet is slow or people freeze' (Survey response)

Learning experience (feeling like a student versus feeling like a nurse)

As with learning opportunities, learning experiences were identified as diverse and nuanced within both the clinical and virtual learning environments. Two sentiments were expressed regarding learning experiences: 'feeling like a student' and 'feeling like a nurse'. Feeling like a student related to students having the opportunity to spend time researching or reading about a topic. It also related to being supernumerary, thereby being able to learn by stepping back and observing a procedure or event. Feeling like a nurse related to students being given the opportunity to practise their clinical skills autonomously, including making clinical decisions, running a clinical area, managing a group of patients or managing other learners during a shift.

Within clinical learning environments, positive learning experiences of feeling like a student were described in the context of students being supernumerary, and being free to engage in various learning opportunities without being counted in staffing numbers:

'I was always supernumerary. They were super busy, but my mentor was like, nope, it's not happening [you will not be counted in the numbers].' (P7)

Negative learning experiences of feeling like a student were described in the context of students not being given the opportunity to actively participate in certain procedures, especially in specialist areas where they could only observe:

'But I couldn't on this placement because it's intensive care. A lot of what I learnt was by standing back and watching and just sort of being told. So I found I really struggled with that.' (P2)

In relation to feeling like a nurse, positive learning experiences in clinical learning environments were described in the context of students taking charge of a group of patients and running Collaborative Learning in Practice (CLiP) bays:

'So I'll be able to learn a lot of things relevant to the placement and how the world works rather than it being like [just] the drug round in the morning.' (P5)

'[on the CLiP bay] it was quite nice to have the support [of other students] or you could bounce off each other a little bit.' (P10)

Negative learning experiences of feeling like a nurse were described in the context of students spending most of their

placement on a CLiP bay and missing out on learning in other parts of the clinical area:

'I would not like to do the CLiP every day because then I'm missing out when something interesting's happening in some other parts of the ward.' (P14)

Within the virtual learning environment, positive learning experiences of feeling like a student were described in the context of students being able to engage in research and reading around pertinent topics:

'I had time to review the topic after every teaching day, to read more about the topic and to ask questions about subjects not clear the next day' (Survey response)

Negative learning experiences of feeling like a student were described in the context of students not being able to put into practice what has been learnt or relate what has been learnt to a real-world experience:

'whenever you want to perform, when you're doing your independent study, whenever you would be trying to simulate, you don't have the work experience.' (P13)

In relation to feeling like a nurse, positive learning experiences in the virtual learning environment were described in the context of students making clinical decisions in a safe environment, while learning from mistakes as scenarios unfolded without patients being harmed:

'you're not going to be taken accountable or responsible for that mistake. So, therefore, you are free to go and make it [the decision] and see what happens. And put it back in a backpack and use it [the learning] later on.' (P13)

No negative learning experiences of feeling like a nurse were identified.

Reflective practice (reflection-in-action versus reflection-on-action)

Reflective practice was described under two themes: reflection-in-action and reflection-on-action. Reflection-in-action is to do with thinking through different approaches to handling a situation while the situation is happening, whereas reflection-on-action is to do with thinking about a situation that has occurred and considering different approaches to managing the situation in the future [33,34]. Reflection-in-action was largely described within the context of clinical learning environments where students would either observe or take part in situations where deteriorating patients were being managed:

'So it's just like they all just methodically work through it, not being so overwhelmed, actually, definitely just in general, because of their sense of calm.' (P3)

This contrasted to reflection-on-action which was largely described within the context of the virtual learning environment, where students would take time to think about scenarios they had been exposed to, either individually or

in a group, and consider different approaches to managing similar situations in the future:

'It helps me to adopt a slow system 2 thinking with having time to logically investigate patient's situation and discuss within group of peers.' (Survey response)

'I think just realising that even though we're learning the same subject, we think so differently, therefore we act differently made me realise that.' (P13)

Students also described how the virtual learning environment allowed for greater reflection-on-action as there was extra time for research and thinking space in comparison to clinical learning environments:

'Researching diseases, conditions and treatments are possible here, whereas at clinical placement, time is a problem and we mostly forgot to go back and find out' (Survey response)

Overall, opportunities for reflective practice were identified in both learning environments.

Discussion

Clinical learning environments have traditionally been viewed as the gold standard for the development of clinical skills within undergraduate nursing programmes [2]. Clinical teams, however, have been experiencing increased workloads and staff vacancies [35,36], providing a notion to reassess this perspective. This research supports the view that although clinical placements offer unrivalled real-world opportunities and experience, simulated environments offer unique opportunities where students can develop their nursing skills, professional identity and competencies [37]; the learning from which improves their clinical practice and increases patient safety [38]. Simulated placements are purposively designed to offer students the opportunity to practice and develop essential clinical skills through targeted activities and real-time coaching and feedback.

Students described how clinical staff were the most significant factor that made a placement purposeful and meaningful. Specific desirable attributes from staff included being welcoming and supportive, providing opportunities, and having knowledge and being willing to teach. These attributes provided a baseline from which deep learning and development could occur. In their study, Doyle et al. [39] concluded that staff on wards were the primary factor that determined student satisfaction and an environment where students were able to develop. Furthermore, supportive staff can also provide irreplaceable learning opportunities through role modelling [40,41]. The variable attitudes of clinical staff towards students do not guarantee that learners will consistently receive good learning support. In this context, combining clinical placements and simulation-based placements would provide opportunities for optimal learning support as simulation tutors are dedicated to promoting student learning and offering timely support.

Clinical placements were identified as offering unparalleled real-world opportunities for hands-on learning of practical skills with real patients. Nevertheless, there was an acknowledgement that the virtual learning environment

helped students develop greater knowledge regarding when and why to perform said skills. There is, therefore, a need to support the balanced development of clinical reasoning behind essential clinical skills and practical competence in performing these skills. As Hunter and Arthur [42] concluded, contemporary educational approaches do not always facilitate the development of nursing students' clinical reasoning. They noted that although graduate nurses possessed knowledge and adequate clinical psychomotor skills, they lacked the clinical reasoning skills to deliver safe, effective care. Therefore, as Hayden et al. [43], as well as Forsberg et al. [44], suggest, the combination of clinical and simulated placements may offer rounded learning opportunities that promote the development of clinical reasoning and essential clinical psychomotor skills.

Workloads and time pressures led to mixed responses to how students perceived both busy and less busy learning environments. Within the virtual placement, as well as in specialist and critical care areas, the time to study various topics, ask questions, and get feedback from staff was appreciated by students. Nevertheless, the slower pace of these learning environments was not enjoyed by all. Some students preferred busy clinical areas that were well-managed and where their supernumerary status was protected. This contrasted with busy clinical areas that displayed a loss of organisational control, thereby leading to what students perceived as chaotic work environments. According to McCloughen and Foster [45], busy, unmanaged clinical environments threaten the learning opportunities and experiences of students as they would need to overcome more barriers than are normally expected, prior to starting the placement. However, they found that emotionally intelligent students, who could adeptly perceive and respond to various situations, experienced more successful placements. Similarly, Hutchinson et al. [46] found that those with higher emotional intelligence were able to practice clinical reasoning using a greater range of perspectives, leading to enhanced decision-making. Indeed, in the current study, students who described taking control of their learning while on placement experienced more positive learning experiences, especially when they had the support of their practice assessors. This nuanced observation of students' perceptions of both busy and less busy learning environments supports the rationale behind the NMC's [1] stipulation that students should experience and learn to work within a variety of placement areas as each placement area offers a unique learning experience.

Reflective practice is a cognitive skill that requires conscious effort to look at a situation with an awareness of own beliefs, values and practice [47]. In healthcare, reflective practice leads to the development and consolidation of knowledge, while enabling healthcare professionals to learn from experiences and apply the learning to future scenarios and situations [48]. Students described engaging in reflection-in-action and reflection-on-action in both clinical and virtual learning environments. In both environments, students discussed reflective practice in the dimension of the theory-practice gap, where both reflection-in-action and

reflection-on-action helped them to address, with a view to narrow, the gap between theory and practice. This focus on the application of theory to practice occurred either as they observed theory being applied during clinical emergencies or as they drew on their experiences and took time to review their actions against the available evidence. This is consistent with the conclusions of Goulet et al. [49] that the specificity of reflective practice in nursing lies in its clinical application and the narrowing of the theory-practice gap in the context of enhancing care. Similarly, Brown [50] found that students reflected on their simulations both during the activity as well as in the debrief, integrating their past experiences and considering the actions taken and how these linked to the theory.

Regarding social constructivist pedagogy and reflective practice in simulation-based education, pre-brief sessions facilitated scaffolding by providing learners with baseline knowledge and information needed to undertake the simulation. Briefing discussions also helped to manage student expectations regarding what could and could not be achieved through simulation, as well as highlighting learning opportunities. Following the briefing, the simulation that students engaged with provided opportunities for reflection-in-action as students discussed and worked through presented scenarios together in small groups [26]. With regard to social constructivism, new knowledge was created through social interaction, where learners linked new concepts to past and present experiences and created cognitive movement [17]. Finally, the debrief (or feedback) helped students to structure and organise new concepts as they reflected on their practice [51]. Thought experiments during debrief sessions helped learners link new learning to past experiences, thereby facilitating thought processes that improved the learners' ability to transfer acquired knowledge to other scenarios, settings and situations [21]. Debriefing also ensured that learning was correct – or that wrong learning was corrected. In line with social constructivist principles, social interaction and listening to others' experiences and insights supported reflection-on-practice, assimilation of information, and modifications to students' learning schemas as information gained from others was incorporated into individual learners' own cognitive networks [14,18].

Overall, the development of knowledge, confidence and essential clinical skills was described in relation to both clinical and virtual placements. Students felt they grew in their ability to deliver care due to improved understanding, ability to perform essential skills, and ability to manage clinical situations in complementary clinical and virtual learning environments. This correlates with the findings of Soccio [52] and Quail et al. [22] that students grew in confidence and self-efficacy in both clinical and simulated-based placements.

Limitations

The preconceived ideas of the strengths and limitations of both clinical and virtual learning environments that students identified were not fully discussed in this paper

as they related to what students thought they would experience as opposed to what they experienced. This, however, is an important aspect to explore as students' initial ideas about what a placement offers can create problematic expectations. For example, some students described the inferiority of virtual placements before they had undertaken the placements. Nevertheless, following the attendance of these placements, these students expressed surprise at how impactful they were to their personal and professional development. It is, therefore, important for educators to proactively manage student expectations by offering placement preparation forums or workshops where preconceptions can be discussed, and any potential problematic or unrealistic expectations are addressed. Such forums may prove useful in allaying anxieties and re-adjusting expectations, so that students possess greater resilience should problems arise, or be open to unexpected opportunities as they approach placements with an open mind.

Recommendations for practice

Regarding placement design, nurse educators should consider leveraging the distinctive nature of simulated placements to bridge the theory–practice gap. By focusing on clinical reasoning, students can explore their past experiences in a secure environment and connect them to evidence-based practices. The current paper advocates integrating both reflection-in-action and reflection-on-action into the simulation process as a valuable and efficient method to narrow the theory–practice gap, ultimately enhancing competence.

Regarding future research, the current paper emphasizes the need for researchers in the field of nurse education to recognize simulated and clinical placements as distinct learning experiences. It advocates an examination of both their congruencies and disparities to ascertain the most effective way in which they may be used to complement each other, thus enriching the holistic learning experience of students.

Conclusions

Undergraduate nurse educators view clinical placements as the gold standard in nurse training for the development of clinical skills. Nevertheless, the COVID-19 pandemic caused unprecedented clinical challenges, including reduced clinical placement capacity and increased workload pressures that are negatively impacting student learning experiences and opportunities. Simulation-based placements offer nurse educators an opportunity to complement current limited clinical placement provision and meet student learning needs. Students in the current study have identified strengths and limitations to both clinical placements and virtual placements, which highlight how these learning experiences may complement each other. For example, where clinical placements offer students unrivalled real-world opportunities to practise essential clinical skills, simulation-based placements promote the development of clinical reasoning behind the application of

these skills. This paper, therefore, supports the inclusion of simulation-based placements, on top of clinical placements, for the effective development of clinical skills among undergraduate student nurses.

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Competing interests

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