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Research article

Capturing, the experiences of undergraduate student nurses undertaking a pre-registration nursing degree course using an adapted experience based co-design approach

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ABSTRACT

Background: The quality of student experience in higher education plays an increasingly important role in attracting and retaining pre-registration nurses. Identifying and understanding the students' experiences of their course is a necessary step in the move towards improving the student experience. Experience Based Co-design (EBCD) is successfully established as an effective process for improving patient experience in a health care setting. This study presents the use of EBCD outside of healthcare, specifically in a higher education setting.
Objectives: To capture, explore and understand the experiences of students' undertaking a pre-registration (adult) nursing course, and co-design potential improvements for future experiences through the application of an EBCD approach.
Methods: An adapted EBCD approach was utilised for gaining insight into what shapes students' experience of the nursing course and to collaboratively produce priority recommendations for course improvement. Semi-structured interviews, emotional touchpoint mapping and co-design events were conducted with undergraduate nursing students (n = 22) and staff stakeholders in a pre-registration (adult) nursing course (n = 19). Findings were analysed using the 'Six phases of thematic analysis' (Braun & Clarke, 2006).
Results: Students had varied experiences on the nursing course, both positive and negative, particularly with student support. Three priority recommendations for course improvement were identified from the findings including: facilitating and supporting student development of independent study skills, enhancing student support in the clinical practice placement environment and clarifying and enhancing the role of the academic advisor.
Conclusions: Findings from this study highlight areas for improvement on a pre-registration nursing course that could impact future students' experience. Furthermore, this study appears to be the first documented as using EBCD in a higher education setting with the focus on students, that enabled students and staff stakeholders in the nursing course to co-design priority recommendations for course improvement.

1. Background

Nursing is a multifaceted profession, as a result nursing courses are often complex requiring nursing students to not only accrue knowledge but become competent, skilful practitioners before graduation. This means nursing students are exposed to a diverse range of learning situations early in their course such as classroom-based teaching, skills laboratories and 'real world' clinical practice. As such their student experience, although sharing some similarities to traditional university students, tends overall to be different than non-health related students' experiences. Exploration of the available literature on student experience of pre-registration (adult) nursing courses reveals a paucity of research when compared with the literature on mental health and child pre-registration nursing. Of those studies conducted, the focus is almost

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exclusively on classroom learning experiences or learning in the clinical practice environment. Few studies explore the student experience of the whole journey through the nursing course from pre-entry to registration.

Articulating the concept of the 'student experience' is fraught with challenges, not least because an experience is unique to the individual describing that experience and is influenced by a multitude of internal and external factors. Historically, much of the literature on student experience pertained to 'experiential learning' or the process of learning through experience (Dewey, 2015; Lewin, 1951; Kolb, 1984). More recently, the student experience is perceived as a wide-ranging concept meaning different things to different students and academic staff (Gibney et al., 2011; Mujtaba, 2012), encompassing all aspects of student life (i.e. academic, social, welfare and support) with learning at the heart of it (Morgan, 2012). Mukerji and Tripathi (2014) view the student experience as the value-added component that a student anticipates receiving from their course. Because student experience is influenced by a variety of different factors, an understanding of what constitutes the student experience will vary from one institution to another (Pitkethly and Prosser, 2001) and even one course to another, creating a challenge when trying to appraise the student experience (Jones, 2018).

Several fundamental premises of EBCD present a useful lens for understanding the student experience. For example, EBCD purports an individual's experience of a service is personal and must appeal on a cognitive and emotional level (Bate and Robert, 2007a). Key moments and events, or touchpoints, within an experience generate identifiable emotions (Bate and Robert, 2007a). Identifying and examining the crucial touchpoints of a service presents the opportunity for service providers to understand users experience of their service and enable redesign of those services to improve future experiences (Bate and Robert, 2007b). Since educators have a responsibility to understand what shapes students experience and to ensure the conditions conducive to shaping worthwhile experiences are established, this paper presents the use of an Experience Based Co-design (EBCD) approach to conducting a qualitative research study exploring the experiences of student nurses on a pre-registration (adult) nursing course from pre-entry to registration in one university in the Northwest of England.

2. Experienced based co-design as a methodology

EBCD is a 'user focused' design methodology, influenced by four overlapping strands: participant action research, user centred design, learning theory, and narrative (Robert, 2013), all of which have historically been used in various educational and organisational settings as distinct methodological approaches. Users of EBCD recognise the approach as both a methodological philosophy and a method for conducting research (Donetto et al., 2015). Within EBCD users of a service are integral to the process of improving the service, with service users possessing unique knowledge and insight into how a service can be improved due to personal experience of that service (Bate and Robert, 2006; Bate and Robert, 2007a). Therefore, a key aim of EBCD is to make the service better for the user, and for the user to be involved in the design process itself (Bate and Robert, 2007a). For this study, the 'service' refers to aspects of a Bachelor of Science (BSc) pre-registration (adult) nursing course that affects the student experience, and student nurses are considered as 'users' of the service. Although previous EBCD projects were predominately based in healthcare settings, the tenets of EBCD can be useful for 'experience research' in higher education settings. Furthermore, studies in student experience have traditionally relied on survey approaches in a similar way to those utilised in healthcare settings (Dewar et al., 2010), which seldom engage participants in an active way in the research process to generate effective change. Whereas EBCD not only focuses on both understanding the subjective experiences of users of a service, but specifically facilitates opportunities for service users to work together collaboratively with service providers to find ways to improve their experience of that service.

2.1. Touchpoints

Touchpoints are a central concept of EBCD and involve identifying the key moments or events that stand out for users as crucial to their experience of a service (Bate and Robert, 2007a). As well as being literal points of contact with the course touchpoints are also considered as "intensely personal points on the journey where one recalls being touched emotionally (feelings) or cognitively (deep and lasting memories) in some kind of way" (Bate and Robert, 2007b, p.49). EBCD places particular emphasis on the emotional aspects of touchpoints. For student nurses there are personal touchpoints during their three-year course where they will develop emotional and cognitive associations. By mapping those emotions and analysing those touchpoints a deeper understanding of the student journey through their undergraduate course can be formed. Once these interaction points or 'touchpoints' are identified and made sense of, a process of co-designing future experiences of those touchpoints on the course can begin with users of, and stakeholders in, the service.

2.2. Experienced based co-design model

Several models for gathering experience related data from service users (patients and carers) and service providers have been proposed since the inception of EBCD, from Bate and Robert's (2007b) four-step approach aimed at capturing the experience, understanding the experience, improving the experience and measuring the experience (NHS Institute for Innovation and Improvement, 2009) to Donetto et al. (2014) EBCD cycle. The EBCD cycle is broken down into six stages: setting up the project, engaging staff and gathering experiences, engaging patients and gathering experiences, bringing patients and staff together for a co-design meeting, forming small co-design teams and holding a celebration event (Donetto et al., 2014). Donetto et al.'s (2014) model has become the most frequently used approach to conducting an EBCD study and was adapted for use in the current study (See Fig. 1 - Adapted Experience Based Co-design process). Donetto et al. (2015) acknowledge the EBCD approach proposed by Bate and Robert (2007a) has undergone a variety of adaptations over the years, with application of the EBCD process being inherently flexible to the contexts and needs of different organizations.

2.3. Stage 1 - setting up the project

To set up the project the research site, course and participant population was identified for the study at a northwest university. The aim of the research was to capture, explore and understand the experiences of undergraduate nursing students on a BSc pre-registration (adult) nursing course, and co-design potential improvements to future experiences, through the application of the EBCD process. Ethical approval for the study was sought from the University Ethics Committee for Science, Technology, Engineering, Medicine and Health (STEMH) with key ethical consideration given to issues of informed consent, confidentiality and anonymity, potential risk to participants, and perceived coercion and power differential between participants and researcher.

Recruitment of participants took place over three years between January 2017 and January 2020. Student participants were drawn from cohorts across all three years of the nursing course, using purposive sampling, and were enrolled as undergraduate pre-registration (adult) nurses at the time of the study. Staff participants with various roles in delivering and managing the BSc Pre-registration (adult) nursing course were recruited for the study including course administrators, the course leader, year leaders, module leaders, lecturers and senior lecturers, the work-based learning manager, nurse educators, clinical placement co-ordinators and practice education facilitators (PEF). In total 22 student participants and 19 staff stakeholder participants were recruited to the study with data collection taking place across four phases (See Table 1 – Study participants and phases of data collection).

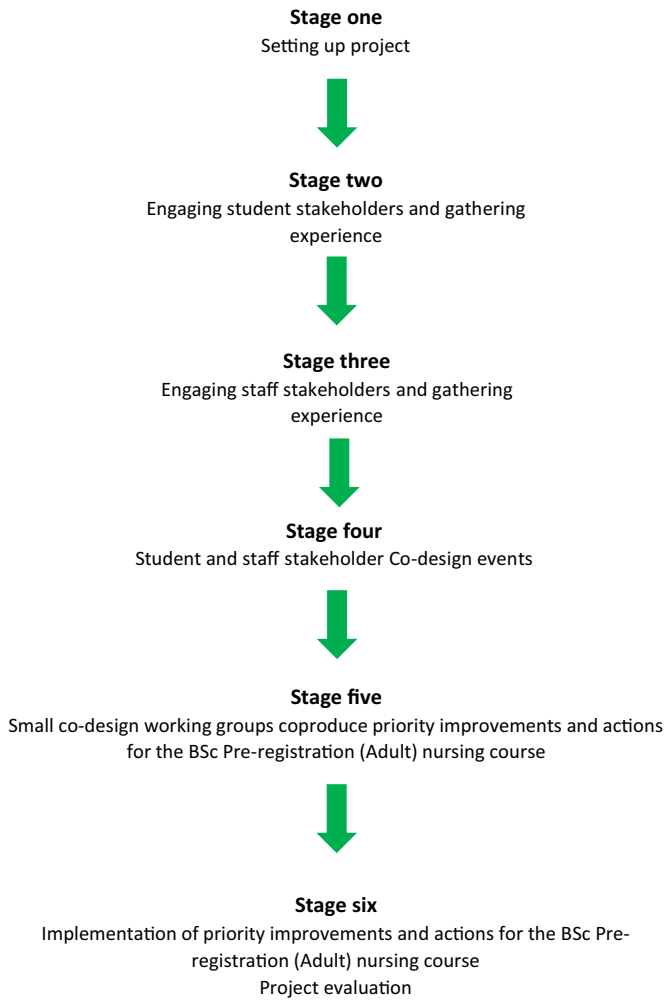

Fig. 1. Adapted experience based co-design process.

2.4. Stage 2 and stage 3 - engaging student and staff stakeholders and gathering experiences

During phase one data collection individual semi-structured interviews with undergraduate pre-registration (adult) nursing students were conducted to capture accounts of their experiences on their course and to use their experiences to systematically identify touchpoints. These initial interviews provided early insight into participants experiences of a service and the key touchpoints within that service (Bate and Robert, 2007b) and were analysed using Braun and Clarke's (2006) 'Six phases of thematic analysis'. Touchpoints identified from the semi-structured interviews were used to form an objective 'process map' (Bate and Robert, 2007b), known as a 'student journey map' for the current study. The student journey map charted specific points of contact between students and aspects of the three-year course crucial to student's experience. The 'student journey map' was then used during phase two and three data collection to facilitate further exploration of emotional touchpoints on the course.

2.5. Stage 4 and stage 5 - student and staff stakeholder co-design events and small co-design working groups coproduce priority improvements

Co-design events deliberately engage service users and service providers in dialogue. This enables both groups to share and understand each other's perspectives (Boyd et al., 2012). Fundamentally, the co-design process within EBCD requires staff and service users to meet, reflect on their experience of a service (whether receiving or providing that service) (Bate and Robert, 2006) and through collaboration identify improvement priorities, then devise and implement changes to that service (Donetto et al., 2014). A traditional approach to conducting co-design events within EBCD is to have joint co-design events (stage 4) followed by small co-design working groups (stage 5) where small groups work redesigning services to address the agreed priorities (Fylan et al., 2021). For this study, the co-design event and small co-design working groups were conducted simultaneously as part of the one event, for logistical reasons. The joint co-design/small co-design working group event was held on site at the University's main campus with

Table 1
Study participants and phases of data collection.

Data collection	Study participant total	Maximum variation		Total
Phase one Semi-structured interviews	N = 8 students	Gender	Male	N = 1
			Female	N = 7
		Ethnicity	BAME	N = 1
			White	N = 7
		Age	18–21	N = 1
			> 21	N = 7
		Year of study	Year one	N = 3
			Year two	N = 2
			Year three	N = 3
Phase two Student emotional touchpoint mapping event	N = 7 students	Gender	Male	N = 0
			Female	N = 7
		Ethnicity	BAME	N = 1
			White	N = 6
		Age	18–21	N = 0
			> 21	N = 7
		Year of study	Year one	N = 1
			Year two	N = 0
			Year three	N = 6
Phase three Staff stakeholder emotional touchpoint event	N = 8 staff stakeholders	N/A	N/A	N/A
Phase four Student and staff stakeholder Co-design events	N = 7 students	Gender	Male	N = 2
			Female	N = 5
		Ethnicity	BAME	N = 1
			White	N = 6
		Age	18–21	N = 0
			> 21	N = 7
		Year of study	Year one	N = 0
			Year two	N = 2
			Year three	N = 5
	N = 11 staff stakeholders	N/A	N/A	N/A

seven students and eleven staff stakeholders. The overall objective of the co-design event was for students and staff stakeholders to collaboratively identify and agree ways to redesign aspects of the nursing course.

The format of the co-design event was based around the 'Double Diamond Design model' (British Design Council, 2005) where participants work through a process of exploring issues more widely (divergent thinking) before conducting a more focused exploration of the issues (convergent thinking) (See Fig. 2 - Double Diamond Design model for Co-design event). The Double Diamond framework is a useful co-design tool that can be specifically tailored to different user groups (West et al., 2017). The event began with participants jointly exploring and discussing the emotional touchpoints on the student journey map (divergent thinking), followed by smaller co-design working groups of three or four people, with consideration given to ensuring a mix of students and staff, exploring the emotional touchpoints associated with negative experiences of the course using the KJ brainstorming technique (convergent thinking). The KJ brainstorming technique is a group consensus approach to prioritising problems and solutions (Spool, 2004; Hunt et al., 2016). Therefore, participants generated and collected multiple ideas and solutions for improving the more negative experiences described on the student journey map using sticky notes. These ideas and solutions were then grouped and clustered into affinity diagrams (divergent thinking) before individuals within the small working groups voted for the group of ideas they wanted to prioritise for course improvements (convergent thinking) (See Table 2 - KJ brainstorming technique adapted for co-design event).

2.6. Stage 6 - implementation of priority improvements and actions for the BSc pre-registration (adult) nursing course project evaluation

Three priority recommendations for course improvements on the BSc Pre-registration (adult) nursing course were identified in the co-design event including facilitating and supporting student development of independent study skills, enhancing student support in the clinical practice placement environment and clarifying and enhancing the role of the academic advisor. Evaluation of the actions related to these priorities will be reported in future papers.

Table 2
KJ brainstorming technique adapted for co-design event.

Steps in the process	KJ method	Application to co-design event
Step 1	Recording ideas	Student and staff participants were divided into small working groups of 3–4 participants. After reading an allocated problem statement each individual silently writes down ideas/solutions to the stated problems on separate post-it notes
Step 2	Sharing ideas	Individuals within each working group takes turns to share all their ideas whilst others within the group listen. Those listening can develop their ideas or add new ideas if inspired to do so.
Step 3	Grouping or Clustering	Working together participants group similar ideas or concepts together. Each group of concepts/ideas is named with a single word or short phrase that best captures the core concept underlying the ideas in that group.
Step 4	Voting	The participants then vote on which solutions matter most. Each person gets a set number of votes (or "dots") that they can place on the solutions they want most prioritised. The solutions that get the most dots represent the priorities for action

3. Results

3.1. Priority 1 - facilitate and support student development of independent study skills

Supporting students to develop independent study skills was identified as a key priority in the co-design event with participants suggesting students should be introduced to the concept of independent study prior to starting the nursing course, with that information being built on from day one of the course and throughout the three years. Suggested ways to achieve this was through encouraging greater collaboration between the University and partner colleges/schools focused on developing independent study in students considering higher education:

Work with colleges to prepare students for university study

One solution was for the University to facilitate two-day summer camps focused on study skills and independent learning prior to students

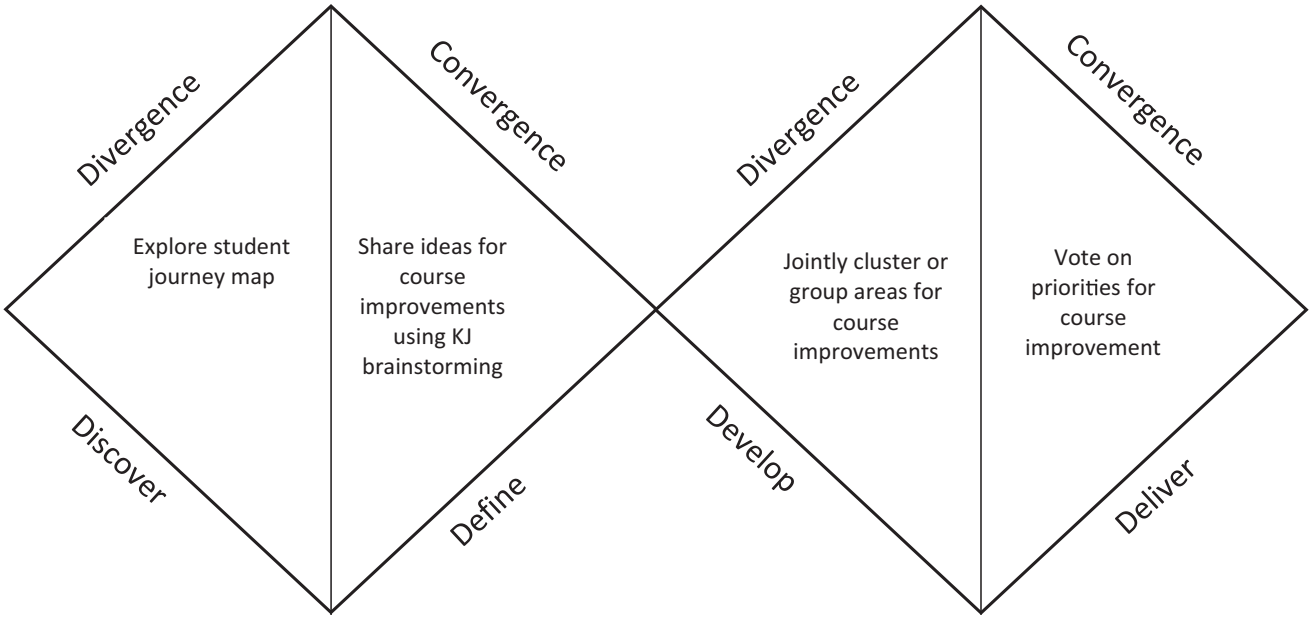

Fig. 2. Double diamond design model for co-design event.

starting the nursing course:

> Offer 'pre course' sessions to go through referencing, academic writing and analytical/critical thinking.

Participants suggested that once on the nursing course, students could be provided with clear resources to help them develop their study skills such as video guides to undertaking independent learning, 'students top tips for academic study/independent learning' devised by previous/current students and more guidance during induction week about independent study skills was recommended:

> We already have clinical skills and numeracy drop-in sessions so let us have academic skills drop-in sessions too.

As students' progress through the course and different academic levels, a recommendation was to establish student led support networks focused on study skills and independent learning, provide academic study skills drop-in sessions, an academic mentor (staff member or other student) to support students with academic studies and make more use of the academic advisor/home group meetings to help support students with study skills and independent learning. Post-it note comments related to priority 1 and recommended solutions are summarised in Table 3 (See Table 3 - Priority 1, Facilitate and support student development of independent study skills).

3.2. Priority 2 - enhance student support in the clinical practice placement environment

Participants specifically suggested mentors, clinical practice supervisors and practice assessors should be better educated about their roles in managing the student clinical practice experience. Continuity of supervision and support was considered a high priority with participants agreeing a specific clinical practice supervisor should be identified as a point of contact on students first day in the clinical practice area:

> Have supervisors in place for the first day of placement so when you show up on placement it's not going to be like "who can we put you with?"

Continuity of supervision and support was considered particularly important for students identified as having neurodiversity, who should have an opportunity to work alongside the same clinical practice supervisor throughout the clinical practice placement where possible. Students were also concerned about the new clinical practice supervisor role being introduced:

> Ensure all staff and previous mentors are familiar with the new clinical practice supervisor and practice assessor roles. I've heard you can have a different practice supervisor for every shift!

Participants also felt there needed to be greater contact between the University and placement area. A suggested way to improve communication was through better use of the Practice Assessment Record and Evaluation (PARE) system. PARE is where students and clinical practice staff document student/staff communications and assessments, progress and competence. However, names and contact information of Academic assessors was not always clearly documented in PARE, making it difficult for students to access support from designated university staff when they were in the clinical practice environment. Furthermore, some clinical staff were not familiar with using PARE. One suggested solution was for there to be more training for students, clinical staff and Academic assessors on using PARE:

> More training on PARE for all students, clinical practice and academic staff!

Participants also agreed there should be more practice education facilitators (PEF) in place to help support students and clinical practice supervisors/assessors in their role. Post-it note comments related to priority 2 and recommended solutions are summarised in Table 4 (See Table 4 - Priority 2, Enhance student support in the clinical practice placement environment).

Table 3
Priority 1, Facilitate and support student development of independent study skills.

Priority 1 - facilitate and support student development of independent study skills					
Post-it note comments	Teach students what independent learning means	Ask previous students to develop top tips for independent study based on their experience	We already have clinical skills and numeracy drop-in sessions so let us have academic skills drop-in sessions too	Have more independent learning throughout the three years so when it comes to 3rd you it's not such a shock	Students are told they are adult learners, but they may not know what this means, include more about this in the 'Welcome week'
	Put on my library study skills sessions and independent learning specifically for nursing	Facilitate learning skills by having more sessions on independent study skills in year one e.g. how to write academically, as this was only touched on at the end of year two	Have study skills sessions timetabled into first year and onwards to adapt and improve academic writing and literature reviewing skills. Make them mandatory throughout the years in home groups	Have sessions with Home group tutors to review learning and come up with an individualised learning plan	Provide more information as to the benefits of independent learning i.e. how will this help students with their future studies
	Work with colleges to prepare students for University study	Include learning how to learn in the curriculum	Use Home group sessions to discuss what we have learned during our independent study	University to provide a definition of 'self-directed study'	Early identification of student's expectations (of independent study)
	Offer one to one drop-in support for academic study skills	Make more use of academic advisors to help support students study skills	Offer a 'pre course' sessions to go through referencing, academic writing and analytical/critical thinking	University to put on student sessions to promote independent learning	Provide students with academic mentors as a specific point of contact
Summary of solutions/ actions	• Implement supplementary study skills • Devise a video recorded guides to undertaking study skills/independent learning similar to YouTube clips e.g. on database searching • Previous/current students to create 'students top tips for academic study/independent learning' for new students • Establish academic study skills drop-in sessions specific for student nurses alongside clinical skills drop-in and numeracy drop-in sessions (setting up academic study skills drop-in sessions where together students and staff can explore effective methods and practices for undertaking independent learning) • Make more use of the academic advisor/Home group meetings to help support students with study skills and independent learning • Introduce an academic mentor, or specific person (staff member or other student), to support students with academic studies • Establish student led support network focused on study skills and independent learning • Introduce greater collaboration with partner colleges and schools focused on future Higher Education students developing independent study skills prior to commencing their university study • Undertake a two-day summer camp focused on study skills/independent learning prior to students commencing their university studies				

Table 4
Priority 2, Enhance student support in the clinical practice placement environment.

Priority 2 - enhance student support in the clinical practice placement environment					
Post-it note comments	Greater contact between University and placement	Call it a partnership rather than a mentorship	More education on how to help and encourage students	Ability to discuss problems through PARE	Add contact names and emails to the PARE document
	Ensure all staff and previous mentors are familiar with the new clinical practice supervisor and practice assessor roles. I've heard you can have a different practice supervisor for every shift!	Have supervisors in place for the first day of placement so when you show up on placement it's not going to be like "who can we put you with?"	Being able to work with a new person for each shift might provide valuable learning experience but it may mean the practise assessor does not get used to the student	On my first placement with the new practice supervisor/practice assessor system it did not feel any different to having a mentor and associate mentor. We all collaborated together to make the most out of my placement for myself and then	There needs to be more of an outline of what is expected from year one, year two and year three students and what to expect from staff
	More education on the additional needs of students and how to look out for struggling students	Incentives for staff to promote the advantages of mentoring a student	More training on PARE for all students, clinical practice and academic staff!	More PEFs to help support staff and students	Let the ward and mentor know that students are coming in advance
Summary of solutions/ actions	• Ensure all clinical practice staff/previous mentors are familiar with their new roles as clinical practice supervisors • Ensure a specific clinical practice supervisor is identified as a point of contact on the students first day in the clinical practice area • Ensure clinical practice supervisors are educated in managing students with additional learning needs in the clinical practice area • Ensure continuity of supervision and support by arranging for students identified as having neurodiversity to work alongside the same clinical practice supervisor throughout the clinical practice placement • Ensure the Practice Assessment Record and Evaluation (PARE) document includes the contact, name and details of Academic assessors • More training for students, clinical staff and Academic assessors on using PARE • Employ more PEFs in practice to support students and mentors/clinical practice supervisors/assessors in their role				

3.3. Priority 3 - clarify and enhance the role of the academic advisor

Academic advisors played an important part in students overall experience on the BSc Pre-registration (adult) nursing course and clarifying and enhancing the role of the academic advisor was identified as a priority for course improvement. Suggested solutions to clarifying and enhancing the role was through appointing an academic advisor lead, offering academic advisor training (particularly to new teaching staff) and devising clearer guidance for students and staff around the role and remit of an academic advisor:

> Provide structured guidance around running academic advisor meetings.

A further solution was the introduction of a peer review and feedback process for the academic advisor role, similar to the peer review process that currently exists for teaching and learning:

> Provide academic advisor peer reviews and feedback.

Findings from this study also suggests there was confusion around the variety of names used to denote the academic advisor role including 'academic advisor', 'Personal tutor' and 'Home group leader', with participants suggesting all material relating to the role should be updated to reflect one title. Post-it note comments related to priority 3 and recommended solutions are summarised in Table 5 (See Table 5 - Priority 3, Clarify and enhance the role of the academic advisor).

4. Discussion

EBCD has been successfully used as a research methodology in a multitude of health care settings, yielding positive documented results around patient experience (Donetto et al., 2014). Tenets of EBCD were appealing for exploring the student experience, particularly as it enabled students to share their experiences of a BSc pre-registration (adult) nursing course, and collaboratively work with staff to identify and co-design course improvements as was evident in the co-design event. Although EBCD has previously been used in healthcare settings. This study reports an original use of aspects of EBCD and evidences the crossover of an EBCD approach from a healthcare setting to an educational setting.

Notably, several aspects of the application of EBCD process outside of a healthcare setting could be improved. For example, no formal training in the use of an EBCD approach was undertaken prior to commencing this study. A recent report mapping the use of EBCD found around 50 % of respondents had not experienced formal training in the use of EBCD (Donetto et al., 2014). This resulted in the development of an EBCD toolkit available for online access (Donetto et al., 2014), which formed the foundation of EBCD knowledge for this study alongside Bate and

Table 5
Priority 3, clarify and enhance the role of the Academic advisor.

Priority 3 - clarify and enhance the role of the Academic advisor				
Post-it note comments	Appoint an Academic advisor lead	I don't know how to contact my Academic advisor	Provide structured guidance around running Academic advisor meetings	More support for being an Academic advisor
	Provide Academic advisor training for the role	I'm unaware of the role of the Academic advisor	Provide Academic advisor peer reviews and feedback	I would go to an academic advisor for university issues
	We need an Academic advisor definition and guidance	I wouldn't want to bother my Academic advisor with placement issues	I don't know how to contact my Academic advisor	Better guidance for students and staff about what the role involves
Summary of solutions/actions	• Appoint an Academic advisor lead • Offer Academic advisor training • Clarify the purpose of the Academic advisor role • Devise clearer guidance for students and staff around the role and remit of an Academic advisor • Enhance student's awareness of the role of the Academic advisor via University intranet site • Introduce a peer review and feedback process for the Academic advisor role similar to the peer review process for teaching and learning • Ensure parity throughout the University around the title used to denote an Academic advisor, update all course/module materials and university webpages to use the same title for the Academic advisor role			

Robert's (2007a) work. These resources were useful for understanding the overarching methodology of EBCD and how to conduct the emotional touchpoint mapping events. However, there was no distinct set of methods advocated for some aspects of the approach. Therefore, within EBCD there is great focus on the practical stages of data collection and co-design, but little attention given to the analysis of any data gathered. Most published EBCD studies do not specify their adopted approach to data analysis, including the seminal work of Bate and Robert (2006). However, several studies since 2006 have identified thematic analysis as their method for analysing data, and one study specifies using thematic framework analysis (Née Blackwell et al., 2017). Clearly documenting the analytical process can potentially add rigor, validate inferences and conclusions drawn in an EBCD study, further increasing the credibility of EBCD as a methodology amongst the research community.

Filmed patient narratives are frequently used to trigger discussion in the co-design events (Adams et al., 2014), but within this study the decision was made to audio record rather than film all individual semi-structured student interviews. Filming students for this study was carefully considered in relation to ethical issues and any future repercussions on study participants. Researchers have a great responsibility to act in the best interest of their study participants both during and after study completion and go to great lengths to protect the interests of study participants by retaining anonymity and confidentiality whilst avoiding 'deductive disclosure'. Filmed semi-structured interviews make individuals identifiable potentially exposing them to future ramification. Thus, film clips used locally, for example in emotional touchpoint mapping events, risked participants being recognised by current peers and academics responsible for the teaching and assessment of student participants. Several other EBCD projects have also chosen not to film study participants in response to staff reluctance and patient nervousness (Cooper et al., 2016). Furthermore, audio recording and transcribing interviews verbatim has been shown to maintain fidelity of the data (DeJonckheere and Vaughn, 2019). Thus, all semi-structured interviews and emotional touchpoint mapping events conducted during the present study were audio recorded, transcribed and analysed for touchpoints and verbatim quotes related to each touchpoint incorporated into the student journey map to prompt discussion during the Co-design event in a similar way to film clips from other EBCD projects.

A potential limitation of this study is the length of time taken to complete the six stages of the EBCD Cycle. Most EBCD projects have a short timeline, with previously published studies completing in under 18 months (Donetto et al., 2014; Locock et al., 2014). However, this study took six-years, from stage-one setting up the project to stage-five conducting the co-design event. Although six years is the acceptable norm for studies undertaken as part of a PhD, and the data collection for this study was conducted over a three-year period, protracted timelines within EBCD can impact recruitment of study participants. Most notably the inclusion of the same participants in the emotional mapping and co-design stages is preferable within an EBCD project. However, all but one of the student participants who had contributed to the semi-structured interviews or emotional touchpoint mapping events had graduated from the course before the co-design event took place. A recommendation for future EBCD projects focused on students as users of a service is to establish a shorter timeline for data collection that would enable students to participate in all phases of data collection and the co-design event.

5. Conclusion

This study set out to capture, explore and understand the experiences of student nurses undertaking a BSc pre-registration (adult) nursing course in one university setting, and identify course improvement priorities that potentially enhance future student experience of the nursing course. The use of the innovative design methodology Experienced Based Co-Design enabled student and staff participants to reflect on the complete student journey through the nursing course rather than exclusively on one feature, time span or pathway on the course. Thus, the findings from the semi-structured interviews, emotional touchpoint mapping events and co-design event helped formulate a meaningful portrayal of the whole student journey through the course for participants in this study. Collaboratively working through the co-design of aspects of the nursing course enabled priority improvements to be identified. Implementation of those priority improvements and actions may positively impact future students experience of BSc pre-registration (adult) nursing courses.

CRediT authorship contribution statement

Conception and design of study: Dr. Sam Pollitt.
Acquisition of data: Dr. Sam Pollitt.
Analysis and/or interpretation of data: Dr. Sam Pollitt.
Validation: Dr. Sam Pollitt.
Drafting the manuscript: Dr. Sam Pollitt.
Revising the manuscript critically for important intellectual content: Dr. Sam Pollitt.
Approval of the version of the manuscript to be published: Dr. Sam Pollitt.
Supervision: Professor Dawne Gurbutt, Professor Nigel Harrison, Dr. Jean E Duckworth (PhD).
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Declaration of competing interest

We have no conflicts of interest to disclose and the manuscript has been approved by all authors.

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