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# Experiences of Physiotherapy and Occupational Therapy Undergraduates and Placement Educators of Blended Practice-Based Learning

\*Helen Orton<sup>ab</sup>, Amanda Deaves<sup>b</sup>, Vikki Barnes-Brown<sup>b</sup>, Christopher Edge<sup>b</sup>, Anna Rees<sup>b</sup> & Denise Prescott<sup>b</sup>

a: School of Health, Wellbeing and Social Care, The Open University, United Kingdom; b: School of Health Sciences, University of Liverpool

## Abstract

Securing sufficient practice-based learning opportunities for health professions learners is challenging, well documented and not unique to the United Kingdom (UK) (Beveridge & Pentland, 2020; Martin et al., 2004). Increasing numbers of allied health professional learners on healthcare programmes, compounded by placement shortages during the COVID-19 pandemic, highlighted the need for radical change and innovative ways of working.

Due to the capacity pressures, blended practice-based placements comprising clinical and project work, were implemented in partnership with clinical sites across the region, enabling 11,800 clinical hours to be achieved and avoiding extensions to programmes for 64 learners. As this placement model had not been robustly tested and fully evaluated, it was agreed to pilot this across different settings, and ethical approval was sought and granted. Participants consisted of second-year physiotherapy and first- and second-year occupational therapy learners, and clinical educators. The mixed research methodology comprised of online questionnaires for the learners and educators, and focus groups for learners. The aims of the study were to ascertain the value and experiences of a newly introduced blended placement-based learning model in response to placement capacity number limitations.

The findings suggest benefits for learners including new skill acquisition (organisational and adaptability), the ability to influence change in patient care, and improved clinical reasoning. Challenges for learners focused on project variations, peer comparability, reduced clinical time, perceived discrepancies in placement assessment decisions, and opportunities to develop confidence.

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\*Corresponding Author: Helen Orton, School of Health, Wellbeing and Social Care, The Open University, Walton Hall, Milton Keynes, United Kingdom, MK7 6AA. Email: [helen.orton@open.ac.uk](mailto:helen.orton@open.ac.uk)

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Alternative placement models are necessary to meet ongoing capacity demands: this work adds to the growing body of placement-related literature..

**Keywords:** *blended practice-based learning, clinical placements, occupational therapy, physiotherapy, placement capacity*

## Introduction

Practice-based learning via clinical placement bridges the theory-practice gap facilitating development to meet the standards of proficiency required by regulatory and professional bodies on graduation ([Twogood et al., 2020](#)). Immersing students in real-world situations ([Sadlo, 2014](#)), consolidates knowledge, advances learning through patient and professional interactions, and enhances professional and clinical reasoning skills ([Brown et al., 2016](#)), consistent with situated learning ([O'Brien & Battista, 2020](#)).

Securing sufficient practice-based learning opportunities for pre-registration healthcare students is a well-documented global challenge ([Beveridge & Pentland, 2020](#); [Martin et al., 2004](#)). Increasing student numbers to expand the workforce to address the complexities of health and social care population needs ([National Health Service \[NHS\], 2019](#)) is necessary, and is consistent with a shift in placement provisions from acute NHS Trusts to community, domiciliary and primary care settings ([Health Education England \[HEE\], 2020](#); [NHS England, 2020](#)), to provide care at the site of need.

Placement capacity was further challenged by community-based placement cancellations after the COVID-19 pandemic and UK “lockdown” ([Alsafi et al., 2020](#); [Salter et al. 2020](#)), and the planned expansion of students on healthcare programmes, consistent with HEE’s Clinical Placement Expansion Programme ([HEE, 2020](#)). This resulted in a challenging 2020 summer national recruitment cycle ([Taylor, 2020](#)), emphasising the need for radical change and innovations to address placement capacity.

## Placement models

The traditional 1:1 placement model of one student to one educator ([Barrett et al., 2019](#); [Martin et al., 2004](#); [Millington et al., 2019](#)) is no longer sustainable with increasing learner numbers, and this model has faced critique as it limits peer learning opportunities. Using collaborative models such as 2:1 or 3:1 (student: educator) facilitates peer learning ([Boud & Garrick, 2012](#); [Markowski et al., 2021](#)), within the associated learning environment ([Alpine et al., 2019](#)). Whilst a 2:1 model can alleviate some placement capacity pressures, a dominance of the 1:1 model persists within UK clinical education ([Barrett et al., 2019](#)),

The School of Health Sciences’ (SHS) practice placement team proposed a blended practice-based learning approach (BPBL) based on a split-placement model (50:50) whose origin is found in Canadian occupational therapy practice as an alternative to traditional placement models ([Gaipman & Forma, 1991](#)). The BPBL model comprised clinical and project work, but with differing ratio splits between the clinical and project work for Physiotherapy (PT) and Occupational Therapy (OT) learners. Due to the pressures, the SHS implemented BPBL in partnership with eight regional (Cheshire and Merseyside) clinical collaborators within the Northwest of England; and, as the placement model had not been robustly tested, it was piloted across different settings.

The aims of the study were to:

1. Ascertain the experiences of the BPBL model for occupational therapy (OT) and physiotherapy (PT) undergraduates through anonymous data collection using an online questionnaire (quantitative) and focus groups (qualitative).

2. Ascertain the experiences of placement educators of the BPBL model through anonymous data collection (quantitative and qualitative) using an online questionnaire.
3. Establish whether the BPBL model is appropriate to address placement capacity challenges.

## Methods

Ethical approval was granted by the Research Ethics Committee, University of Liverpool (reference number 9852). A mixed methods approach was employed, commencing with quantitative data collection via questionnaires, followed by qualitative data collection using focus groups with undergraduate participants.

## Participants and recruitment

A convenience sample was utilised: all OT and PT learners who completed BPBL were eligible to participate, along with their respective placement educators. The PT learners were based within one large NHS teaching trust where a 30-hour, five-week placement was based on a 19:11 split (clinical hours: project work hours, respectively) and where the clinical educators were familiar with the University's requirements. The clinical settings for the PT learners included musculoskeletal outpatients, orthopaedics, critical care, rehabilitation, and elderly medicine. OT placements ranged from a one-week (observational) placement in Year One, to eight weeks in Year Two, and included acute physical, community, and mental health, and learning difficulties across the NHS, Social Care and Private Independent Voluntary Organisations (PIVOs) settings, consistent with the complexity of healthcare delivery ([Barrett et al., 2019](#)). The split between clinical work and project work for OT learners was fluid according to clinical demands. The PT and OT educators were a targeted sample as they supervised the learners and were invited to take part in the questionnaires.

During placements, all potential participants (learners and educators) were emailed inviting them to participate in the research and provided with the relevant participant information sheet. On conclusion of the placements, questionnaires were distributed using the Joint Information Systems Committee (JISC) software via email to all participants. Email reminders increased the response rate. Consent was deemed to be both implied and valid on accessing and submitting the completed questionnaire. OT and PT learners were subsequently invited, via email, to participate in profession-specific focus groups and consent forms were duly provided and completed prior to the focus groups.

## Data collection

Quantitative data were collected via two anonymised questionnaires, one for learners and the other for educators, devised from existing literature ([Barrett et al., 2019](#); [Prigg & Mackenzie, 2002](#)), which consisted of statements measuring a range of parameters (see [Appendix 1](#)). Participants indicated their agreement or disagreement with each statement on a five-point Likert scale. Both questionnaires had two open-ended questions requiring comments on the benefits and disadvantages of BPBL.

The qualitative data collection occurred sequentially and included three focus groups (two PT groups of four and three learners respectively, and one OT group of two learners). These were conducted during May and July 2021 (within six weeks of the placement experience), online via Zoom all of which were of one hour's duration, undertaken by facilitators who were clinical academics. Potential bias was addressed by ensuring that the facilitators' professions were different from the profession-specific learner focus groups. The principal investigator, unconnected to either of the professional groups, attended all focus groups, took notes during all sessions, and provided a 'backup' facilitator in the event of the facilitator

losing internet connection. An interview guide provided structure to ensure consistency of topics explored (Patton, 2015). The participants were provided with a code to ensure anonymity and the focus groups were audio-visually recorded and then transcribed verbatim by an experienced research transcriber, ensuring all identifiable content was rendered anonymous. The transcript for each group was sent to the respective focus group members for review.

## **Data analysis**

The quantitative data from the questionnaires were analysed using descriptive statistics (Statistical Package for the Social Sciences [SPSS] 27 software). The variables from the questionnaire were reported as frequencies and percentage prevalence, along with the median and interquartile range (IQR) (Appendix 2). The data from all of the learner and practice educator groups was analysed together. Fisher's exact test (Pett, 2016) was used to determine associations between the learner and practice educator groups, to explore if the relationship between the two influenced the findings. The data was recoded to collapse into three categories (disagree, undecided, agree) for this analysis (Appendix 2). The qualitative information gained from the free text comments within the questionnaires were reviewed to consider any consistencies of opinion among the respondents via content analysis (Stemler, 2000).

NVivo software enabled organisation and analysis of the qualitative information from the focus groups. These data were analysed using a thematic analysis approach (Vaismoradi et al., 2013), and a reflexive perspective was adopted allowing the generation of themes throughout the coding process (Braun & Clarke, 2019). To maintain consistency and to minimise bias two teams of researchers, including the facilitators of the focus groups, reviewed their respective transcript data independently. After completion of the initial coding, each pair of reviewers compared their analysis: agreed codes were reviewed against the data to ensure that each data item had been given equal attention and that all data had been accounted for. This process was repeated with four researchers who agreed codes across the focus groups and the professions. The coding process was thorough, inclusive, and comprehensive. In the second phase of the analysis, the researchers coded the data into identified themes: theme definitions were discussed and agreed upon, for which there was consensus from the independent principal investigator. The primary data was placed alongside the themes to demonstrate rigour of the process and increase the trustworthiness of the findings, achieved further through an independent reviewer, thereby reinforcing investigator triangulation (Denzin, 1970). Consideration during the report writing allowed for the final analysis to occur by interpretation of the key themes to address the research aims.

## **Results**

### ***Descriptive statistics***

The overall response rate for all participants was 43% (45/104): response rates for practice educators was 40% (17/42 - 12 physiotherapy and 5 occupational therapy educators), and for learners 49% (28/57 - 49 physiotherapy and 8 occupational therapy learners). All questionnaires were completed in full and included within the analysis.

Appendix 2 provides the median and IQRs for all participants, as well as for physiotherapists, occupational therapists, learners, and educators. The percentage agreement with the statements for the learners and the practice educators and the between group analysis utilising Fisher's exact test (Pett, 2016) of the learners and the practice educators is also given.

There was a consensus with the questionnaire statements, indicating that the placement was well received by the participants and the placement experience was perceived to be positive. Statement 17, which related to non-traditional roles, was the only one significant association between participant groups

(learner/practice educator) where the learners disagreed, whereas the educators indicated a positive response. [Appendix 2](#) highlights that the educators were divided regarding learner supervision as indicated by statements 23, 27, 28 and 30. Statements 32, 33 and 34 clearly indicated that educators were less positive regarding the BPBL model in comparison to the traditional 1:1 placement model.

### **Qualitative results**

The free text comments from the practice educators (PE) and learners (L) enabled the participants to articulate the benefits and challenges of BPBL. Practice educators reported several benefits including opportunities for learners to experience wider healthcare provision issues and provide the practice teams with useful resources for evidence-based practice. As PE 16 noted, “Learners worked in a more self-directed and autonomous manner to provide a valuable service which required them to engage with other team members and the wider health community”.

Learner-reported benefits related to time management and greater opportunities to reflect and learn new skills away from the clinical setting. As L5 commented, “I had time to research and reflect more, helping my clinical practice”.

Regarding the challenges, practice educators identified reduced clinical time as significant, as well as the duplication of some tasks, which negatively impacted on time-efficiency. PE12 noted, “Reduced clinical hours for learners. No continuity in care due to time needed to familiarise themselves with the learning environment and handing back patients, every few days. They missed out on valuable sessions to assist their learning”.

Educators identified challenges associated with supervision and different approaches to learning. PE4 commented, “There is an element of trust and honesty from the learner. I anticipate it may be harder to monitor or track some learners’ progress if they aren’t as proactive with their time/non-clinical days.” Consistent with the educators, the learners stated that a reduction in clinical time negatively impacted on their clinical skill development and experience. L1 noted, “The lack of clinical exposure to conditions and patients plus limited opportunity to develop clinical skills reduced hands-on learning experience. The ‘project’ is not an appropriate substitute for the clinical experience and hours being lost”.

Furthermore, learners perceived the variety of projects as unfair, in relation to the scope and depth involved within the project they were tasked to complete. L1 felt that “Some got a big project (audit) - others designed a small leaflet. The discrepancy across the cohort felt unfair.” This inequity extended to the marking of the placement due to potential challenges aligning the marking criteria with the placement activities. As noted by L15 “I didn’t develop and progress with my patient caseload like my peers. I had to be creative in meeting the marking criteria as I had fewer opportunities”.

### **Findings from the focus group**

The aim of the focus groups was to understand and contextualise the responses from the questionnaire findings of the experiences of the BPBL model for PT and OT learners. Four themes were determined from which several subthemes further clarified the learners’ experiences of the blended learning placements. Some sub-themes sit under both barriers and enablers, as seen in [Table 1](#).

**Table 1:**

**Percentage agreement with the blended learning evaluation and quality of placement experience questionnaire**

Themes	Sub-themes
Barriers of placement model to learning	Specialty Confidence Limited clinical time Type of project Continuity with patients Placement logistics and preparation
Enablers of placement model to learning	Specialty Pace and type of environment Educator Peer learning and support Type of project
Managing expectations of the placement model	Learner; educator and Higher Education Institute Communication of the need for an alternative placement model Service improvement project Appropriate preparation
New skill acquisition and enhancement from placement model	Enhanced knowledge and skills Clinical reasoning Communication and team-working Future skills development Reflective practice Time management Organisation Independent working

## Analysis of themes and sub-themes

### Theme one: Barriers

Whilst OT and PT learners reported barriers to BPBL, there were significant differences. Both learner groups were equally concerned about the impact of BPBL from an assessment perspective and the impact on their marks and degree outcome as OT2 stated, “I worried how it would affect my grade (mark).” PT learners worried about their grades (marks) compared to their peers who accessed traditional full-time placements. This concern was compounded by educators commenting that performance at specific points during the placement was lower than expected, acknowledging that lack of clinical exposure contributed negatively. PT7 felt that “Placement marks can affect degree classification...those on a traditional placement might have done better...I was a week behind in attaining expected marks compared with others.” While PT4 commented, “The marking criteria should be different to reflect less clinical time, if BPBL are continuing”.

Comparing their experiences of BPBL with fellow learners completing traditional placements, PT learners recommended greater parity with the whole cohort undertaking BPBL, so all learners would experience the same. PT4 stated, “If we are having BPBL, make it for the whole cohort so no one feels disadvantaged” and PT2 commented, “You felt as if you were comparing yourself with those doing a full placement and that was unfair, and I felt I needed to do something extra to catch up”.

PT learners were apprehensive about reduced clinical time and ongoing continuity with patients within the specialty, alongside their commitment to maximise available learning opportunities. This was perceived to impact learners’ ability to build rapport, provide continuous and, potentially, best patient care. PT5 said, “I went in when I was ill as I did not want to miss clinical time, but I was sent home”, and PT7 stated, “It was chop-and-change with no continuity with the patients: when I returned the next week, the patients on the elderly ward did not remember me.” Conversely, OT learners reported opportunities

to work more independently as positive: “The project showed that I was more independent in my work” (OT2).

PT and OT learners would have preferred more standardisation, and support regarding the placement and project activities. Some PT learners felt disconnected with their project topics and associated perceived level of difficulty and parity. They questioned their learning and the value of their project to the department. As OT2 noted, “I had to figure it out myself, others were given lots of guidance on the structure”, and PT7 commented, “It was meant to be meaningful and beneficial for the Trust<sup>1</sup>: mine was simple and did not take much time to complete”.

Predominantly, placement structure and logistics, ranging from late changes to placement sites and clinical specialties, reduced clinical time, to not knowing the project requirements created negative emotional responses. OT1 said, “Cancellations days before the start of the placement, meant I had unanswered questions as the educator worked part-time”, and PT6 commented, “Projects need to be clarified before the placement”.

Developing confidence was challenging with BPBL. This manifested through nervousness around placement changes; fewer opportunities to interact with patients; having to rebuild confidence each week, and having the time to develop effective team working. PT5 stated, “I was unable to build my confidence as I wanted”. PT1 said, “I agree: my confidence took a knock as everything changed from one week to the next.”

### **Theme two: Enablers**

Despite the barriers, there were positives. OT learners believed that their personal attributes contributed to the placement success, and identified specific abilities and their value during this learning experience: “I’m a practical and independent person, like to be busy so I was happy to lead on the project” (OT2). PT learners reported that the learning environment was pivotal. They cited enablers including the setting and specialty, the educator, the team and peer support. Rotating through clinical areas with the educator, facilitated exposure to diverse clinical specialties and complex patients, particularly on wards and in the community. As PT6 noted, “My educator worked on different wards every week and the community, so I saw lots of different conditions across the settings.”

The PT learners reported that educators’ knowledge, teaching approaches and inter-professional support improved their placement experience but this was not specific to the project aspect of the placement. As PT5 commented, “The educator made a massive difference, especially on a split placement.” Having once been learners themselves, the educators were empathetic. One PT learner believed that completing projects should be part of practitioners’ roles. PT2 said, “My experience was enjoyable: the team was friendly. They encouraged involvement and learning and to accept that this is (project work) part of their normal job.”

Another PT learner reported that being within the clinical environment for only part of the week eased them into real-life working, not feeling as tired as their peers who undertook a traditional placement: “It wasn’t as intense: it was nice as a first placement and eased me into work-life a bit more” (PT3).

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<sup>1</sup> For clarification, Trusts in this context refers to the NHS hospitals or community healthcare providers



Timetabling two learners simultaneously for their clinical time provided peer learning and support for the PT learners, more consistent with a traditional placement. As PT5 reflected, “Peer learning was amazing. Some patients were complex: sharing what we learnt was beneficial.”

### **Theme three: Managing expectations**

Both OT and PT learners expressed disappointment regarding their allocation to the BPBL experience rather than a more traditional full-time clinical experience. However, distinct differences in terms of managing expectations of BPBLs materialised. OT learners felt let down by this change to the placement structure, stating that although the unmet expectations were, in the main, COVID-related and due to reduced clinical time, they were also hampered by their placement experiences. However, the project activity undertaken within the placement was viewed as a positive experience. As OT1 noted, “Not being on the ward set me back, worsened with COVID...COVID set me back more than the project which allowed me to gain more knowledge and research things more”.

Reassuringly, OT learners understood the rationale for BPBL and recognised that it was a “necessity”. They appreciated the learning opportunities provided. However, prior explanation would have allowed them “to know what to expect”. As OT1 noted, “We were worried - unsure of what to expect.”

PT learners also expressed disappointment; this was primarily related to being uninformed of the BPBL model when they were selecting a university. However, both groups related this, in part, to feelings of uncertainty, acknowledging that COVID was a key contributing factor. As PT5 commented, “We did not sign up to this (BPBL). COVID put a massive spanner in the works...although things are returning to normal; we’ve heard rumors that this (BPBL) is happening again”.

Furthermore, PT learners reported that better communication for an alternative placement model, and the related service improvement project was necessary. The perceived differences in levels of support provided to learners by their university academic advisers was a further source of discontent. “Better arrangements and support are needed: PowerPoint templates for any presentations; well-established timetables for students to discuss their project learning with tutors” (PT1).

Unlike OT learners, PT learners raised concerns around the project itself. In particular they felt clarification on topics would have created greater consistency, fairness and equity; reducing the ramifications from the learners and educators’ perspectives, and managing expectations: “Greater explanations are needed prior to starting placements” (PT6).

Moreover, PT learners suggested educators needed time to prepare a service improvement project and explain potential implementation within the organisation. This would have enhanced the understanding for the project, as well as the associated skills and motivation required to complete it. As PT1 stated, “Projects were not always thought through. My title was vague: was I writing or reviewing a questionnaire? There was no direction, even when I questioned what I was supposed to be doing. I don’t think BPBL helped me.”

Communication of placement changes was often last minute, coinciding with the retraction of placement offers due to organisational pressures. PT learners felt unprepared and more anxious: greater time to prepare for different placements would have alleviated these feelings: “I was upset - it was unexpected....unnerving as I like to know what to expect and be fully prepared for placements” (PT3).

### **Theme four: New skill acquisition and enhancement**

Both OT and PT learners highlighted skills that were developed because of the addition of the project work. As BPBL provided time away from the busy clinical environments, the OT learners valued the

opportunity to reflect more and become fully immersed within the topic area related to their project. OT1 commented, “I had a lot of research for different activities: I learnt a ton! (learnt a lot)” and OT2 noted, “I was able to take a step back, evaluate more and at my own pace”.

Whilst the PT learners did not identify reflection *per se*, they reported enhancement of research methods, referencing, communication and presentation skills. As PT6 stated, “My communication and teamwork skills improved as I worked with another student to collect data” and PT2 commented, “My presentation skills improved as did my courage as I presented to band sevens.”

The experience enhanced their communication, clinical reasoning, and patient-centred care via the utilisation of enriched knowledge. The PT learners reported that they more readily considered the patients as individuals and tailored their assessments and care accordingly because of their project activities: “As I had more knowledge from doing the project, I led conversations with patients and their families rather than my educator, so I was more autonomous and able to clinical reason” (PT5).

Both OT and PT learners identified that, through BPBL, they enhanced their time management and organisational skills, their ability to work independently and learned to be adaptable and remain calm. OT1 felt, “It helped with organisation; being in control of your own work – that was massive - and finding time to complete the project. It made me more confident”. PT6 commented, “The main skill I learnt is adaptability which is always needed in the NHS”.

## Discussion

Placement capacity pressure highlighted the need to revisit placement models, requiring greater creativity to provide meaningful learning opportunities (Clarke et al., 2021). This research study reports on educators and learners’ experiences of a BPBL placement model, which consisted of both clinical and project-based learning, to address placement capacity challenges. The BPBL placement was an amendment to the traditional placement model that had previously been organised and was only applicable for a limited number of PT and OT learners in specific settings, where extreme pressures on services would have resulted in the cancellation of placements at extremely short notice. This created anxiety for the learners as they felt mentally unprepared for an unfamiliar placement model, which they had no option but to accept. The alternative placement model also raised questions around parity of the learning experience.

Reflecting on the findings from both the questionnaire (Appendix 2) and the focus groups, four main themes were identified. Each theme containing several subthemes that clarified both the learners and educators’ experiences of BPBL (Table 1).

The timescale over which BPBL was introduced constrained the practice placement team in effectively communicating the placement model. This in turn impacted on the management of expectations. Within the study, managing expectations of BPBL was recognised by educators and learners as being challenging, and had a negative impact on the placement experience. Preparing learners for the practice-learning environment is not only essential in equipping them with the necessary knowledge and skills, but also in terms of managing the expectations of what to expect and what might be expected of them by educators (Thomson et al., 2014). Universities need to be more forward thinking in supporting and educating learners and placement providers need to consider alternative placement models, in order to address continuing placement capacity (Barrett et al., 2019). The priority of the practice placement team was to enable practice placements, so that learners could graduate at the planned time to meet workforce demands. The speed and extent to which the alternative placement model was implemented was exacerbated by the COVID-19 pandemic, resulting in a higher than normal volume of cancelled placements. The practice placement team recognised that accommodating the learners was only achievable through alternative clinical learning activities, hence the adoption of BPBL.

Introducing a new placement model will always be challenging for both educators and learners, particularly if the change is introduced partway through learners' programmes. The urgency with which alternative placements were required prohibited the practice placement team from consulting with stakeholders, namely the placements sites and learners, prior to the placement. Providing justification for the change in placement model would have facilitated understanding for the change (Dogherty et al., 2010), thereby addressing the expectations of all parties. Recognising that changes to placement models require extensive planning and must be made in collaboration with the HEIs (Nyoni et al., 2021) is key for their success. Cummings & Worley (2015) recommend that a sequential and prescribed approach consisting of motivating for change, creating a vision, developing political support (stakeholders), managing the transition and sustaining the momentum through establishing commitment for the proposed change, should be adopted to ensure a successful change. The study provided empirical evidence that preparation for both learners and educators in terms of effective communication between the different stakeholders, is essential if alternative placements involving new ways of working where learners and educators are taken out of their comfort zone, are to be offered as a solution to address placement challenges. Educators need to be mindful that increasing the number of alternative placement models may negatively impact on learner and education satisfaction, with a subsequent effect on the quality of service and associated service user outcomes (Beveridge & Pentland, 2020). However, as new placement models are introduced, the provision of targeted education and guidance becomes more standard practice. Taking a transformative approach to traditional placement models facilitated meeting the needs of the learners, employers and professional bodies by producing practitioners who were suitably trained and able to deliver appropriate healthcare as part of the workforce.

Within healthcare education, it has been recognised that increasing pressures, anxiety and uncertainty can create challenges in securing a psychologically safe environment (Edmondson et al., 2016). From the study, it is apparent that psychological safety is a key factor for learners to achieve their potential and respond positively within a learning environment (McClintock et al., 2022), without fear of negative consequences (Hylton et al., 2019). Consideration of these factors and awareness to reduce the tensions between the learning experiences, expectations and environment can support the development of enhanced psychological safety (McClintock et al., 2022). This concept allows the learners to feel empowered within the environment and creates a trusted and open relationship allowing for full development of skills.

Project-based placements, whether full-time or part-time as BPBL, are gaining momentum for health care learners including nursing and allied health professionals, in the UK and globally (Forbes & Martin, 2020; Strand & Tveit, 2020). The diverse differences in the nature and scope of projects within the BPBL pilot caused considerable distress related to ambiguity around the project, and the impact of reduced clinical hours in terms of skills development and the subsequent placement assessment outcome, a concern which has previously been documented (Prigg & Mackenzie, 2002).

The barriers expressed by the OT and PT learners related to feelings of being in control and how comfortable they felt, including alignment of the placement experience to their learning needs and their desire for success. As the learners had to adjust at short notice to placement changes combined with an initial lack of understanding regarding this novel placement approach, this potentially caused an unsafe environment psychologically (McClintock et al., 2022). However, the learners were motivated and acutely aware of the parameters that facilitated the success within the assessment criteria. Consequently, the clinical experiences within these health education programmes were highly valued by the learners. Therefore, their perceptions caused psychological cognitive discord for the learners regarding their ability and motivation to succeed (Scott et al., 2014) and the potential opportunities within BPBL.

The impact of these potentially negative emotions relies on the learners being able to demonstrate resilience to these challenges and exploring their own internal responses. Within the clinical environment it is well documented that resilience helps to prevent burnout (Ferreira & Gomes, 2021) and supports

satisfaction within the working environment (Stewart et al., 2020). Resilience is the ability to return to a state of normalcy following significant stress or adversity (McKinley et al. 2020), as well as continually striving towards a positive outcome (Abram & Jacobowitz, 2021). These changes in expectation and the ability to adjust to the autonomous learning environment were key elements of BPBL. Resilience is embedded within undergraduate curricula to enhance the learners' strategies to respond to challenges within the clinical environment. To ensure successful implementation of the BPBL, it is essential that learners' expectations and their knowledge and understanding of the process, are aligned with the assessment structure, and communicated in a timely manner with clarity.

BPBL enabled learners to develop both personally and professionally through demonstrating elements of self-direction, self-efficacy, self-recognition and self-evaluation to complete the project. These characteristics are reflected in individuals who showed higher levels of resilience (Cooper et al., 2020). Whilst the placement model was not designed to test resilience, it appears that the process of experiencing this learning approach allowed individuals to recognise their own personal strengths and potentially influence their resilience to the changing environment. The process of building resilience within healthcare learners is complex and challenging (Rogers, 2016). Despite these difficulties the UK healthcare regulator for allied health professions, the Health and Care Professions Council [HCPC], (2020) recognises the need to support learners to develop this attribute.

There were many perceived benefits of the BPBL reported as evidenced by the placement quality questionnaire utilised. From the rich qualitative data, it was clear that learners were insightful regarding their own abilities, recognising how BPBL strengthened some of their professional characteristics including independent learning and working, enhanced communication, developed essential skills sets, and a proactive approach: this was congruent with the educators' views. Completing projects in clinical practice improved confidence, particularly as learners became more familiar with the environment and processes (Greenlees et al., 2021; Strand & Tveit, 2020), and also increased capability through being dynamic and flexible (Greenlees et al., 2021), synonymous with professional characteristics essential for future autonomous professional practice (Nancarrow, 2015; Strand & Tveit, 2020). The future workforce is reliant on newly qualified AHPs having the ability to meet the requirements of the team, the working environment and respond at short notice to any service demands. These professional and personal characteristics are highly desirable to minimise the negative effects associated with transition shock (Opuko et al., 2021) within employees and would support their successful transition from learners to qualified professionals.

BPBL, through project completion, facilitated deeper learning, consistent with the literature (Lawton et al. 2021), but also evidenced by the learners stating they were able to explore topics in depth. Furthermore, it provided learners with an opportunity to further their reflective practice through self-recognition (Sherwood et al., 2018). The positive benefits of reflective practice to enhance professional practice competency is well-established (Chaffey et al., 2012), and the ability to develop these skills is associated with enhanced patient care and safety. Schön's (1983) model of reflective practice (cited by Schön, 1991) outlines the different opportunities where reflection can occur. The learners recognised and valued the opportunity to 'reflect-on-action': the separation from the hectic clinical environment provided a conducive atmosphere allowing time for deeper connections to be made. The ability to become an effective reflector can help protect from a burnout phenomenon (Hunt, 2020) and therefore may increase the longevity of the individual within a fast-paced clinical environment (Weinstein et al., 2019).

The learners identified several key areas where they felt BPBL helped them. Undertaking projects allowed the learners to gain well-recognised and important professional and generic skills associated with time management, organisational skills, team working (Greenlees et al., 2021), negotiation (in terms of their project choice) and different forms of writing, appropriate to their project (Janiak, 1993, cited by Hunt 2006). Learners also reported enhancement of their communication skills (Fortune & McKinstry, 2012) with patients and professional colleagues due to their increased knowledge and confidence,

respectively. The concept of independent and more autonomous working was realised by learners and welcomed by educators and also encouraged greater team-working. BPBL challenged the learners whilst equipping with them with insight into the real world and work-readiness (Greenlees et al., 2021) and expectations that projects are part of healthcare professionals' roles in terms of service improvement. In the words of Batalden & Davidoff (2007, page 3): 'Everyone in healthcare really has two jobs when they come to their everyday work: to do their work and improve it.' These abilities and skills as core competencies relate to their role as a newly qualified AHP's standards of proficiency (HCPC, 2023).

BPBL was a valuable initiative, which enabled clinical partners to offer placements enabling 11,800 clinical hours to be achieved, while maintaining their clinical commitments. Without this innovation, 64 second-and third-year OT and PT learners would have required an extension to their programmes due to placement cancellation, which would have impacted on their progression into the workplace. The challenges that the learners have overcome by the inclusion of the project activities within BPBL has enhanced key personal and professional skills and behaviours, whilst simultaneously benefiting the service through the engagement and completion of valuable projects. These transferable skills can be utilised within other areas of practice and ultimately support their success within their first posts.

## **Strengths and limitations**

This study had a reasonable, well-balanced sample size in terms of learners and educators for the quantitative aspect, representative of the stage of training within their respective programmes. Whilst the educator sample was smaller than the learners, this can be explained partly by the fact that the educators supported learners on more than one placement, and along with COVID and workload pressures at the time of the study, participating in the research was not a priority. The researchers had expected a greater uptake to participate in the focus groups: imminent vacations may have contributed to lower interest. Subsequently, there were two physiotherapy and one occupational therapy focus groups, conducted shortly after the completion of the respective placements, with a total of seven physiotherapy learners and two occupational therapy learners. Whilst we accept that our focus group numbers were low, as were our overall participant numbers, in accordance with perceived practice (Carlsen & Glenton, 2011), the researchers felt it was beneficial for the study to continue considering the impact that the blended learning approach had and continues to have in addressing placement capacity and facilitating learners' availability to support the workforce. Whilst this study was conducted at the time of the COVID-19 pandemic, generalisability is limited and further research into whether BPBL is an appropriate model including analysing the differences between placement length and settings is recommended. In alignment with the UK Government policy and the newly released NHS Long-Term Workforce Plan (2023), there is a need to increase training numbers to meet workforce needs, and it is therefore essential that all placement models are considered.

## **Conclusion**

This study evaluated blended learning practice placements for physiotherapy and occupational therapy students in one UK University. The findings demonstrated that students gained transferable skills whilst taking part in these placements. BPBL assisted with placement capacity, enabling OT and PT learners to complete their programmes in a timely manner. This suggests that BPBL may be a suitable model to use in pre-registration AHP programmes. It is essential that all stakeholders are communicated with effectively, in a timely manner and expectations are managed as a priority to ensure success of the placement model. However, given the issues with generalisability previously discussed, further research, exploring BPBL within different settings is required.

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## Ethical approval

Ethical approval was granted by the Research Ethics Committee, University of Liverpool (Ref: 9852).

## ORCID

Helen Orton <https://orcid.org/0000-0001-9164-7253>  
Amanda Deaves <https://orcid.org/0000-0007-0227-6069>  
Vikki Barnes-Brown <https://orcid.org/0000-0002-7172-209X>  
Christopher Edge <https://orcid.org/0000-0001-9419-2787>  
Anna Rees <https://orcid.org/0000-0002-7242-588X>

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## Appendix 1

### Blended learning Evaluation and Quality of Placement Experience Questionnaire

Please indicate your level of agreement from (strongly disagree to strongly agree) to each of the following statements.

The Likert scale consisted of 1: strongly disagree, 2: disagree, 3: undecided, 4: agree, 5: strongly agree.

		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	<b>Personal issues scale</b>					
1	Overall, I enjoyed my experience					
2	The learning goals were reviewed regularly and altered to reflect my progress					
3	I have developed in my own personal growth as a result of this placement experience					
4	I experienced a greater degree of confidence working with clients during this placement					
5	My contribution was valued during this placement					
6	I was encouraged to extend my knowledge development through the project activities (e.g. reading, literature reviewing).					
	<b>Professional issues scale</b>					
7	I have developed a sense of the breadth of the professional role					
8	I have gained experience that will be useful to me on graduation					
9	This placement was representative of the potential future working environment					
	<b>Learning Issues scale</b>					
10	I was able to develop my clinical/ professional reasoning skills					
11	I was able to develop professional skills and behaviours					
12	I practised skills beneficial to me in this practice area					
13	I had more responsibility for self-directed learning via the project activities					
14	I was able to learn from both positive and negative experiences					
	<b>Environment scale</b>					
15	I had a positive teaching/learning relationship with other students					
16	I had experience in the placement focus area					
17	I had roles not usually experienced during a traditional placement					
	<b>Supervision scale</b>					

18	I had adequate time with my supervisor					
19	I had a positive teaching/learning relationship with my supervisor					
20	I had a positive teaching/learning relationship with other staff					
21	I was able to negotiate with my supervisor so we both had a clear understanding of our needs and expectations (e.g. hours of work, timeline of skill development, expected workload, documentation requirements, assessment requirements)					
	<b>Practice Educators Only</b>					
22	Overall, my experiences supervising learners on this placement was positive					
23	I was able to maintain my clinical commitments better than usually the case with a traditional type of learner placement.					
24	I enjoyed supervising the learners on this blended learning placement					
25	The blended learning placement model significantly increased the time available for non-direct patient care work (quality activities, research activities, education material development)					
26	The service I provide has benefited from the contribution of the learner project					
27	The blended learning placement was a positive experience					
28	I was able to assess the learners adequately					
	Please indicate your responses to the following questions using the Likert scale					
29	I was able to provide adequate feedback to the learners					
30	I felt adequately prepared for this placement by the university					
31	I felt adequately supported by the university during the placement					
32	I would prefer to supervise learners using this blended learning placement model					
33	I would prefer to supervise learners using a 2:1 model					
34	I would prefer to supervise learners using a 1:1 model					

## Appendix 2

### Percentage agreement with the blended learning evaluation and quality of placement experience questionnaire

			Disagreement (strongly disagree & disagree) % (n)	Neutral % (n)	Agreement (strongly agree & agree) % (n)	Median (IQR)	Group analysis student / PEs
<b>Personal issues scale</b>							
1	Overall, I enjoyed my experience	TOTAL N = 45	11.1 (5)	4.4 (2)	84.5 (38)		NS (not significant)
		Learners n= 28	10.7 (3)	3.6 (1)	85.7 (24)	4 (4-5)	
		Practice educators n=17	11.8 (2)	5.9 (1)	82.3 (14)	4 (4-4.5)	
2	The learning goals were reviewed regularly and altered to reflect my progress	TOTAL	6.7 (3)	8.9 (4)	84.4 (38)		NS
		Learners	10.7 (3)	10.7 (3)	78.5 (22)	4 (4-4.5)	
		Practice educators	0 (0)	5.9 (1)	94.1 (16)	4 (4)	
3	I have developed in my own personal growth as a result of this placement experience	TOTAL	4.4 (2)	15.6 (7)	80.2 (36)		NS
		Learners	3.6 (1)	14.3 (4)	82.2 (23)	4 (4-4.5)	
		Practice educators	5.9 (1)	17.6 (3)	76.5 (13)	4 (3-4)	
4	I experienced a greater degree of confidence working with clients during this placement	TOTAL	6.6 (3)	20.0 (9)	73.4 (33)		NS
		Learners	7.2 (2)	14.3 (4)	79.2 (22)	4 (4)	
		Practice educators	5.9 (1)	29.4 (5)	64.7 (11)	4 (3-4)	
5	My contribution was valued during this placement	TOTAL	17.8 (8)	0 (0)	82.2 (37)		NS
		Learners	3.6 (1)	10.7 (3)	85.7 (24)	4 (4-4.75)	

		Practice educators	11.8 (2)	11.8 (2)	76.5 (13)	4 (3-5)	
6	I was encouraged to extend my knowledge development through the project activities (e.g. reading, literature reviewing).	TOTAL	8.9 (4)	8.9 (4)	82.2 (37)		NS
		Learners	14.3 (4)	14.3 (4)	71.4 (20)	4 (3.25-4)	
		Practice educators	5.9.(1)	0 (0)	94.1 (16)	5 (4-5)	
<b>Professional issues scale</b>							
7	I have developed a sense of the breadth of the professional role	TOTAL	24.4 (11)	6.7 (3)	68.9 (31)		NS
		Learners	21.5 (6)	7.1 (2)	71.4 (20)	4 (3-4.75)	
		Practice educators	29.4 (5)	5.9(1)	64.7 (11)	4 (1.5-4)	
8	I have gained experience that will be useful to me on graduation	TOTAL	11.1 (5)	8.9 (4)	80 (36)		NS
		Learners	7.1 (2)	10.7 (3)	82.2 (23)	4 (4-5)	
		Practice educators	17.7 (3)	5.9 (1)	76.5 (13)	4 (2.25-4.75)	
9	This placement was representative of the potential future working environment	TOTAL	26.7 (12)	6.7 (3)	66.7 (30)		NS
		Learners	32.2 (9)	10.6 (3)	57.2 (16)	4 (2-4.75)	
		Practice educators	23.6 (4)	5.9 (1)	70.6 (12)	4 (2.25-5)	
<b>Learning Issues scale</b>							
10	I was able to develop my clinical/ professional reasoning skills	TOTAL	26.7 (12)	6.7 (3)	66.6 (30)		NS
		Learners	28.6 (8)	7.1 (2)	64.3 (18)	4 (2-4)	
		Practice educators	23.5 (4)	5.9 (1)	70.6 (12)	2 (2.5-4)	
11	I was able to develop professional skills and behaviours	TOTAL	11.1 (5)	11.1 (5)	77.8 (35)		NS
		Learners	14.3 (4)	14.3 (4)	71.4 (20)	4 (3-5)	
		Practice educators	5.9 (1)	5.9 (1)	88.2 (15)	4 (4-4.5)	

12	I practised skills beneficial to me in this practice area	TOTAL	8.9 (4)	13.3 (6)	77.8 (35)		NS
		Learners	7.2 (2)	14.3 (4)	78.5 (22)	4 (4)	
		Practice educators	11.8 (2)	11.8 (2)	76.5 (13)	4 (3.5-4)	
13	I had more responsibility for self-directed learning via the project activities	TOTAL	20 (9)	6.7 (3)	73.4 (33)		NS
		Learners	28.6 (8)	7.1 (2)	64.4 (18)	4 (2-5)	
		Practice educators	5.9 (1)	5.9 (1)	88.3 (15)	4 (4-5)	
14	I was able to learn from both positive and negative experiences	TOTAL	6.6 (3)	11.1 (5)	82.2 (37)		NS
		Learners	7.1 (2)	7.1 (2)	85.7 (24)	4 (4-5)	
		Practice educators	5.9 (1)	17.6 (3)	76.5 (13)	4 (3.5-5)	
<b>Environment scale</b>							
15	I had a positive teaching/learning relationship with other students	TOTAL	13.3 (6)	13.1 (6)	73.3 (33)		NS
		Learners	14.3 (4)	14.3 (4)	71.5 (20)	4 (3-5)	
		Practice educators	11.8 (2)	11.8 (2)	76.5 (13)	4 (3.5-5)	
16	I had experience in the placement focus area	TOTAL	13.3 (6)	15.6 (7)	71.1 (32)		NS
		Learners	21.4 (6)	17.9 (5)	60.8 (17)	4 (4)	
		Practice educators	0 (0)	11.8 (2)	88.2 (15)	4 (4)	
17	I had roles not usually experienced during a traditional placement	TOTAL	31.1 (14)	13.3 (6)	55.6 (25)		P=0.03
		Learners	35.7 (10)	21.4 (6)	42.9 (12)	3 (2-4)	
		Practice educators	23.5 (4)	0 (0)	76.4 (13)	4 (3.25-4.75)	
<b>Supervision scale</b>							
18	I had adequate time with my supervisor	TOTAL	13.3 (6)	13.3 (6)	73.3 (33)		NS

		Learners	21.4 (6)	10.7 (3)	67.9 (19)	4 (3-5)	
		Practice educators	0 (0)	17.6 (3)	82.4 (14)	4 (4-5)	
19	I had a positive teaching/learning relationship with my supervisor	TOTAL	0 (0)	6.7 (3)	93.3 (42)		NS
		Learners	0 (0)	7.1 (2)	92.9 (26)	5 (4-5)	
		Practice educators	0 (0)	5.9 (1)	94.2 (16)	4 (4-5)	
20	I had a positive teaching/learning relationship with other staff	TOTAL	0 (0)	8.9 (4)	91.1 (41)		NS
		Learners	0 (0)	3.6 (1)	96.4 (27)	5 (5)	
		Practice educators	0 (0)	17.6 (3)	82.3 (14)	4 (4-5)	
21	I was able to negotiate with my supervisor so we both had a clear understanding of our needs and expectations (e.g., hours of work, timeline of skill development, expected workload, documentation requirements, assessment requirements)	TOTAL	8.9 (4)	4.4 (2)	87.7 (39)		NS
		Learners	10.7 (3)	7.1(2)	82.2 (23)	4 (4-5)	
		Practice educators	5.9 (1)	0 (0)	94.1 (16)	4 (4-5)	
<b>Practice Educators Only</b>							
22	Overall, my experiences supervising learners on this placement was positive		17.7 (3)	17.6 (3)	64.7 (11)	4 (3-4.5)	
23	I was able to maintain my clinical commitments better than usually the case with a traditional type of learner placement.		35.2 (6)	11.8 (2)	52.9 (9)	4 (2-4)	
24	I enjoyed supervising the learners on this blended learning placement		35.2 (6)	0 (0)	64.7 (11)	4 (2-4)	
25	The blended learning placement model significantly increased the time available for non-direct patient care work (quality activities, research activities, education material development)		17.7 (3)	11.8 (2)	70.6 (12)	4 (3-5)	
26	The service I provide has benefited from the contribution of the learner project		23.5 (4)	11.8 (2)	64.7 (11)	4 (2.5-4)	
27	The blended learning placement was a positive experience		35.3 (6)	11.8 (2)	52.8 (9)	4 (1.5-4.5)	
28	I was able to assess the learners adequately		29.4 (5)	17.6 (3)	52.9 (9)	4 (2-4)	

29	I was able to provide adequate feedback to the learners		23.5 (4)	0 (0)	76.5 (13)	4 (13.5-5)	
30	I felt adequately prepared for this placement by the university		23.6 (4)	23.5 (4)	52.9 (9)	4 (2.5-4)	
31	I felt adequately supported by the university during the placement		23.5 (4)	11.8 (2)	64.7 (11)	4 (2.5-4)	
32	I would prefer to supervise learners using this blended learning placement model		64.7 (11)	0 (0)	35.2 (6)	3 (1-3)	
33	I would prefer to supervise learners using a 2:1 model		35.3 (6)	47.1 (8)	17.7 (3)	3 (1.5-3)	
34	I would prefer to supervise learners using a 1:1 model		5.9(1)	11.8 (2)	82.4 (14)	4 (4-5)	