

Education programmes on performance-based assessment for allied health and nursing educators: a scoping review

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Abstract

Purpose – Performance-based assessment (PBA) plays a pivotal role in evaluating allied health and nursing students' readiness for independent clinical practice. Despite its importance, training for clinical educators in PBA is often ad hoc and inconsistent. This scoping review aimed to map the landscape of existing PBA education programmes for allied health and nursing educators and describe their content, format and educational impact.

Design/methodology/approach – A scoping review was conducted based on Arksey and O'Malley's framework in accordance with the Joanna Briggs Institute scoping review guidance. Searches of five electronic databases and three grey literature collections were performed for publications from 2000 to 2025. Articles were included if they reported on design, implementation or evaluation of PBA educator programmes. Screening and data extraction were conducted independently by three reviewers using a standardized tool to chart programme characteristics, instructional strategies, outcome measures and educational impact. Data were synthesized descriptively.

Findings – Of 5,306 records screened, nine studies met inclusion criteria. Programme durations ranged from 1–15 h, primarily delivered via in-person workshops ($n = 8/9$). Instructional strategies frequently included interactive workshops, video-based simulation of student's performance and guided practice. Outcome measures focused on educators' self-reported confidence, knowledge gains and rating accuracy, with most studies reporting improvements.

Practical implications – Results indicated that interactive, simulation-based workshops enhance educators' assessment skills, knowledge and confidence. However, important gaps remain regarding optimal programme length, pedagogical frameworks, translational of training into the work environment and longitudinal outcomes.

Originality/value – Standardized, evidence-informed training is needed to ensure reliable PBA practices and maintain the integrity of competency-based education.

Keywords Continuing professional development, Work-integrated learning, Competency-based education

Paper type Literature review

Introduction

Performance-based assessment (PBA) is the process used during clinical placements to gauge healthcare professional students' readiness for independent practice (Meyer *et al.*, 2019). In real-life, uncontrolled clinical environments, PBA verifies that students can provide safe, effective patient care and meet standardized professional competencies required by outcome-based education (Epstein and Hundert, 2002; Holmboe and Kogan, 2018). Although PBA should ideally serve as a robust indicator of competence, preliminary literature searches have revealed a dearth of evidence-based education programmes designed to train clinical educators in PBA (Trebe *et al.*, 2015; Wu *et al.*, 2017). When assessors are not sufficiently trained or knowledgeable, it casts doubt on the reliability of judgments regarding a graduate's competency (O'Connor *et al.*, 2019).



Assessment within clinical settings is inherently complex because it is influenced by multiple factors: the assessor, the learning environment and the design of the assessment task itself (Seldomridge and Walsh, 2018; Govaerts and van der Vleuten, 2013; Alpine *et al.*, 2021). Clinical educators assume significant responsibility, as PBA outcomes often determine not only student progression within university programmes but may also contribute a substantial portion of the overall final grade (Heaslip and Scammell, 2012; O'Connor *et al.*, 2018). One critical factor is the variability introduced by assessors (Yeates *et al.*, 2013). Differences in how clinical educators interpret tasks, apply assessment criteria and manage dual roles, i.e. serving as both mentor and examiner, can lead to inconsistencies (Meyer *et al.*, 2019; Seldomridge and Walsh, 2018; Yeates *et al.*, 2013; Kilgour, 2011). Furthermore, time pressures, cognitive and cultural biases, and the challenge of converting a complex, dynamic performance into a discrete numerical score further complicate the process (Govaerts and van der Vleuten, 2013; Yeates *et al.*, 2013; Ogden *et al.*, 2008; Gingerich *et al.*, 2011). These issues are particularly acute when assessing an underperforming student (Duffy and Hardicre, 2007).

Adding another layer of complexity, the clinical environment itself introduces challenges beyond the control of the assessor. The presence of multiple, simultaneous clinical demands, the unpredictable nature of a live clinical episode and at times the complexity of patient care may add to the challenge of the assessment process (Meyer *et al.*, 2019; Holmboe and Kogan, 2018; Yeates *et al.*, 2013). As a result, difficulties in ensuring fair and accurate assessment can undermine the validity of PBA, leading to questions about whether graduates are adequately prepared for practice (Seldomridge and Walsh, 2018; Heaslip and Scammell, 2012). Healthcare professionals participating in student supervision and assessment have different titles across nursing and allied health, such as preceptors, mentors, practice educators or clinical teachers (O'Connor *et al.*, 2019; O'Brien *et al.*, 2019; McCarthy and Murphy, 2010; Quigley *et al.*, 2020). In this article, the term “clinical educator” is used when referring to a healthcare professional undertaking a student’s clinical assessment.

The literature consistently points to major challenges in PBA related to inter- and intra-rater reliability and highlights the need for adequate training and education for effective assessment processes (Seldomridge and Walsh, 2018; Dudding *et al.*, 2017; Govaerts and van der Vleuten, 2013; Rubenson *et al.*, 2020). Clinical educators who are less confident in their assessment skills and their own clinical competency or are unfamiliar with current assessment practices may inadvertently compromise PBA decisions. Consequently, supporting clinical educators through targeted professional development is critical, not only to ensure fairness in evaluation but also to uphold the integrity of the overall accreditation process (Seldomridge and Walsh, 2018; Heaslip and Scammell, 2012; Quigley *et al.*, 2020). This concern has motivated calls for more robust professional development in assessment practices, so that clinical educators can make sound, defensible decisions when evaluating students in dynamic work environments (Newstead *et al.*, 2017; Quigley *et al.*, 2020; Wu *et al.*, 2017).

Most research on PBA has emerged from medical education, though considerable differences exist in how PBA is implemented across various healthcare disciplines (Ogden *et al.*, 2008; Steinert *et al.*, 2016; Mikkonen *et al.*, 2022). In medicine, clinical rotations are typically brief, involving supervision by clinical educators for short, discrete periods and students are often assessed using tools such as the Mini-Clinical Examination Exercise (Mini-CEX) or Direct Observation of Procedural Skills (DOPS) (Holmboe and Kogan, 2018; Hemmer *et al.*, 2015; Hanson *et al.*, 2013; Regehr *et al.*, 2011; Walsh *et al.*, 2017). These tools focus on specific aspects of performance, often at pre-arranged time points and sometimes without comprehensive verbal or written feedback (Kogan *et al.*, 2017; Swanberg *et al.*, 2022). This segmented approach may not fully capture the integrated, evolving nature of clinical practice or the nuances of patient management over time (Hanson *et al.*, 2013; Regehr *et al.*, 2011).

In contrast, nursing and allied health professions typically employ PBA as a continuous process that unfolds over six to twelve weeks (Barrett *et al.*, 2021; Finstad *et al.*, 2022). Students often work under the supervision of one or two consistent clinical educators, enabling a more thorough, longitudinal evaluation (Barrett *et al.*, 2021). In some professions such as

nursing, practice supervisors (clinical educators) facilitate students' learning and contribute to the overall assessment by documenting observations and providing feedback, while dedicated practice assessors evaluate whether learning outcomes and competencies have been reached, supported by academic assessors who collate the evidence and offer feedback ([Addis and Loughrey, 2025](#)). Clinical educators in these contexts may conduct multiple daily observations that assess not only clinical reasoning and technical skills but also professional behaviour and communication ([England et al., 2017](#); [Brown and Crookes, 2017](#)). Feedback is usually both formative and summative, through multiple sources of observation and documented assessments, which foster ongoing dialogue about performance ([Myers et al., 2022](#)). The different implementation contexts between medicine and allied health/nursing suggest that the educational needs of clinical educators must be tailored to the nature of their specific clinical learning environments.

Universities have recognized the need to induct and continuously educate clinical educators. In addition, a growing number of national frameworks and career pathways highlight the need for standardized training and education (NHS Nursing and Midwifery Educatory Framework, AHP Educator Career Framework, The National Health and Social Care Professions Quality Framework for Sustainable Practice Education). Many institutions offer education programmes aimed at preparing new educators for the dual roles of supervisor and assessor, as well as more advanced training for experienced educators looking to refine their teaching and assessment capabilities ([McCarthy and Murphy, 2010](#); [Alpine et al., 2021](#); [Bacon et al., 2015](#); [Milne et al., 2022](#); [Wu et al., 2017](#)). These programmes are primarily delivered via formal, instructional methods, including university-based workshops and online courses, and often incorporate training on implementing PBA ([Alpine et al., 2021](#); [Bacon et al., 2015](#); [Milne et al., 2022](#); [Ferguson et al., 2010](#)).

Despite these initiatives, certification requirements and training guidelines vary considerably, and there are no universal standards concerning the content, format or frequency of PBA education. In medical education, interventions such as interactive workshops and video-based case vignettes, based on frameworks such as "Performance Dimension Training" or "Frame of Reference Training" have been shown to boost assessors' confidence, skills and knowledge ([Holmboe et al., 2004](#); [Kogan et al., 2015](#)). However, improvements in grading accuracy and consistency have been less reliable. Similar approaches in allied health fields underscore the benefits of ensuring that assessors engage in interactive dialogue during the decision-making process, which appears to enhance both transparency and rating accuracy ([Alpine et al., 2021](#); [Bacon et al., 2017](#)).

A systematic review by [Milne et al. \(2011\)](#), focusing on clinical educators in mental health professions, found that while a diverse range of topics were covered within training programmes, the specific aspect of assessment was not always explicitly addressed ([Milne et al., 2011](#)). More recent scoping and systematic reviews similarly emphasize the need for professional development in assessment practices, yet they fall short of directly addressing PBA-specific training ([Tassoni et al., 2023](#); [Wu et al., 2017](#)). Searches in databases such as MEDLINE (Ovid), Best Evidence Medical Education, JBI Evidence Synthesis and the Cochrane Database (July 2022) indicate that explicit scoping review protocols on education programmes for PBA in allied health or nursing are notably absent from the literature.

With rising pressures from accreditation and regulatory bodies, universities are increasingly accountable for ensuring that clinical educators are adequately prepared (NHS Educators Workforce Programme). The pressure to provide credible and defensible PBA outcomes is compounded by the commitment of healthcare managers, who must allocate time and resources to allow clinical educators to participate in these training programmes. Preparing clinical educators to deliver robust assessment practices calls not only for on-the-job experience but also for continuous, focused professional development ([Tassoni et al., 2023](#); [Gorman and Rentsch, 2009](#)).

Given the complexities of PBA and the multifaceted challenges of real-world clinical environments, there is a compelling need to comprehensively investigate the existing literature

on educational approaches for PBA (Alpine *et al.*, 2021; Immonen *et al.*, 2010). The aim of this scoping review was to map and describe education programmes, targeting the PBA skills of allied health and nursing clinical educators who implement continuous assessment processes during clinical placements. This review is timely and necessary for guiding universities and regulatory bodies in developing standardized, effective training that supports clinical educators' understanding and implementation of PBA, thus safeguarding both student progress and public trust in new healthcare graduates.

Materials and methods

Protocol and registration

The scoping review was carried out in line with the framework presented by Arksey and O'Malley (Arksey and O'Malley, 2005), and further extended by Levac *et al.* (2010), Daudt *et al.* (2013) and Peters *et al.* (2022). This methodology was also in accordance with JBI scoping review guidance (Peters *et al.*, 2017). The protocol was registered on the Open Science Framework and published in HRB Open (Alpine *et al.*, 2024). The protocol described the planned approach and methods of review, which are described briefly in this paper.

Objectives

The objectives of this scoping review were to:

- (1) Explore the extent, range and nature of the literature on PBA education programmes provided to allied health and nursing professionals.
- (2) Chart specific characteristics related to the context, target population, format, aim, instructional methods/teaching strategies, content, pedagogical approaches, evaluation methods, key findings and/or educational impact of these programmes.
- (3) Collate, describe and summarize the available evidence on PBA education programmes, and identify any gaps in the existing research.

Eligibility criteria

Led by the research question, the research team generated inclusion/exclusion criteria based on the Population–Concept–Context framework. Peer- and non-peer-reviewed studies in the English language in full-text or report format were included. Primary qualitative, quantitative or mixed methods research studies that reported the design and/or implementation and/or evaluation of PBA education programmes for allied health and nursing clinical educators were considered. Opinion pieces, reviews and conference abstracts that commented on PBA empirical research or had PBA as a primary focus were also included. Literature was searched from the year 2000 recognizing the growth of research and development in the area of work-based assessment in recent decades. Databases were searched from the 1st January 2000 until the 30th October 2022, and an updated search was completed on the 12th August 2025.

Search and study selection

Comprehensive search strategies were developed in consultation with a professional medical librarian to identify relevant literature from a broad range of sources using keywords and index terms relevant to this research area. Electronic database searches of EMBASE, ERIC, MEDLINE (Ovid), Web of Science and CINAHL were conducted; publications identified were imported into Covidence, and all duplicates removed.

A grey literature search of Google Scholar, Open Grey, GreyLit and ResearchGate was undertaken using a combination of keywords. A specifically designed search strategy was developed with the librarian for Google Scholar. The first 50 articles identified from the search were transferred to a Microsoft Excel file and duplicates removed. During the grey literature

search, it became apparent that GreyLit was no longer available as a database, and it was removed from a revised version of the published protocol ([Alpine et al., 2024](#)).

Two reviewers (LA, MOG) independently screened the titles and abstracts of a random sample of 20 retrieved articles and appraised them against the inclusion/exclusion criteria. Any differences in decision-making were discussed to reach a clear understanding of the criteria to ensure consistency between the reviewers before commencing the full review of titles and abstracts. Discussion items were then shared with the research team, as a third author joined the screening process.

All titles and abstracts in Covidence were then reviewed by the lead author (LA), with the two reviewers (MOG, EB) appraising half of the articles each to identify relevant titles for a full text review. Three consultation meetings between the lead author and reviewers took place to finalize inclusion/exclusion decisions and deliberate on any uncertainties that arose during screening. When a decision could not be agreed regarding inclusion/exclusion of a title and abstract, these articles were included for full text review. This review was then completed by two authors (LA, EB). Any disagreements were resolved through discussion to reach consensus.

Data charting and summarizing results

A data extraction tool based on the extraction fields identified in the protocol was developed and piloted with six articles by two authors (LA, EB). Two tables were created: [Table 1](#) recorded the authors, year and country of publication, study design and the aims of the study. [Table 2](#) captured healthcare discipline, size and type of study, format, duration, number of contacts for the education programmes, teaching context, instructional methods used, content and evaluation of the programmes, and main findings and/or educational impact.

Results

The literature search identified 5,420 records. Following the removal of duplicates, 5,306 records were screened by title and abstract. A total of 5,164 studies were excluded, with reasons for exclusion noted in the PRISMA flowchart in [Figure 1](#). A total of nine studies were included, describing 11 individual training programmes.

The following sections address objective (1) and (3). These objectives are also addressed in [Table 1](#), which describes the general characteristics, study design and overall aims of the included studies.

General characteristics

The majority of the research ($n = 4/9$) was undertaken in Australia ([Ferguson et al., 2010](#); [Bacon et al., 2015, 2017](#); [Milne et al., 2022](#)), with two studies from the United Kingdom ([Cross et al., 2001](#); [Durham et al., 2012](#)), and one each from Ireland ([Alpine et al., 2021](#)), Canada ([Moline et al., 2018](#)) and the USA ([Vendrely and Carter, 2004](#)). Most studies ($n = 6/9$) were published after 2010 ([Durham et al., 2012](#); [Bacon et al., 2015, 2017](#); [Moline et al., 2018](#); [Alpine et al., 2021](#); [Milne et al., 2022](#)). Study size varied from a small pilot study with six participants ([Durham et al., 2012](#)) to a large multi-centre study with 240 participants ([Ferguson et al., 2010](#)). All studies, with the exception of one, reported on a single training programme ([Vendrely and Carter, 2004](#)). In contrast, [Vendrely and Carter \(2004\)](#) compared four training options. Two of the training programmes were delivered independently, Clinical Instructor Instrument (CPI) training and Clinical Instructor Education and Credentialing Programme (CIECP), with the third programme combining elements of both, and the fourth involved no training ([Vendrely and Carter, 2004](#)).

Study design and aims

Studies were of mixed methods ([Cross et al., 2001](#); [Ferguson et al., 2010](#); [Durham et al., 2012](#); [Bacon et al., 2015, 2017](#)) or quantitative ([Vendrely and Carter, 2004](#); [Moline et al., 2018](#);

Table 1. Characteristics of included studies

Author and year	Country	Study design	Study aims/Objectives
1. Cross et al. (2001)	United Kingdom	Mixed methods – experimental pre-post intervention and correlation study of ratings, comparing against two assessment tools	To explore if (1) CEs vary in their ability to discriminate between levels of students' performance, (2) training makes a difference to CE's decision making and (3) assessment decisions are influenced by the assessment tool when comparing two different clinical assessment forms
2. Vendrey and Carter (2004)	United States of America	Quantitative – correlation study comparing assessment scores of four different training options	To compare four different assessment training options to determine impact on rating students' performances (1) Clinical Instructor Instrument (CPI) training (2) Clinical Instructor Education and Credentialing Programme (CIECP) (3) Both CIECP and CPI training and (4) No training programme.
3. Ferguson et al. (2010)	Australia	Mixed methods – experimental pre-post intervention	To determine if a standardized training workshop increased clinical educators' confidence and understanding of a new clinical assessment tool (COMPASS)
4. Durham et al. (2012)	United Kingdom	Mixed methods – pilot study of a new training programme	To evaluate a new education programme aimed at preparing and supporting sign-off mentors (SOM) for student final practice assessment
5. Bacon et al. (2015)	Australia	Mixed methods – pilot study of a new online training programme	To explore the potential for a web-based programme to support clinical educators' assessments practices
6. Bacon et al. (2017)	Australia	Mixed methods – experimental pre-post intervention	To measure the variation in clinical educators' judgements of a student's performance and explore the influence of group discussion on their judgements
7. Moline et al. (2018)	Canada	Quantitative – experimental pre-post intervention	To assess the effectiveness of two workshops designed to improve the confidence and placement supervision skills of CEs in the areas of communication and feedback (Workshop A), competency assessment and cultural competency (Workshop B)
8. Alpine et al. (2021)	Ireland	Quantitative – prospective cross-sectional, single-group pre-post intervention	To evaluate the impact of a clinical educator training workshop on differentiating grades of student's performances
9. Milne et al. (2022)	Australia	Quantitative –quasi-experimental pre-post intervention	To appraise the impact of a one-day workshop on the perceived knowledge, skills, attributes, ability to use the APP and overall confidence of clinical educators to assess students' performances

Note(s): Abbreviations: APP - Assessment of Physiotherapy Practice, CE - Clinical Educator, CIECP - Clinical Instructor Education and Credentialing Program, CPI - Clinical Performance Instrument, COMPASS - Competency Assessment in Speech Pathology, SOM - sign-off mentor

Table 2. Characteristics of programmes

Study	Population, teaching format and context	Instructional methods	Programme content	Programme outcomes	Key findings and educational impact
1. Cross et al. (2001)	<i>Population:</i> Physiotherapists (<i>n</i> = 44) <i>Format:</i> In-person training programme, 2.5 h duration <i>Context:</i> Single training occasion, University setting	Didactic teaching of assessment concepts Simulated assessment practice, scoring six videos of different levels of performance	Key features of effective assessment, including formative and summative assessment <i>Explicit criteria for good/bad performances</i> <i>Simulated assessment practice pre-post training</i>	Correlation between CEs and academic ratings pre- and post- training <i>Comparison of CE mean ranking of student's level of performance with standardised rankings of the group</i> <i>Utility of two assessment tools pre- and post-training and rationale for preference between tools</i>	<i>Key findings:</i> Pre-training correlations showed a wide difference in CEs' assessment scores. CEs' grades aligned more with academics for the lower-level students, with variability at mediocre and good levels 57% of CEs showed stronger standardized assessment scores after training irrespective of the assessment instrument. General tendency to regress to the mean, resulting in poorer students' performance not receiving a fail grade Most educators (86%) preferred Form B <i>Educational impact:</i> Training impact was variable, demonstrating mostly positive, a small number of negative and in some cases no influence on CEs' assessment decisions

(continued)

Table 2. Continued

Study	Population, teaching format and context	Instructional methods	Programme content	Programme outcomes	Key findings and educational impact
2. Vendrely and Carter. (2004)	<i>Population:</i> Physical Therapists ($n = 34$) <i>Format of CPI:</i> In-person training, 1 h duration <i>Context CPI:</i> Single training occasion, University setting <i>Format of CIECP:</i> In-person training, 15 h duration <i>Context CIECP:</i> Training occasions not provided, University setting	CPI – Didactic teaching of assessment processes <i>Simulated assessment practice using assessment criteria and written description of a student's behaviour</i> <i>CIECP – no details of teaching methods used</i>	CPI – familiarisation with assessment criteria <i>Simulated grading practice. Additional reading of glossary items and sample scoring</i> <i>CIECP – roles and responsibilities in clinical education, basic learning theory, teaching methods, performance assessment, managing an exceptional student, legal issues</i>	Correlations of CEs' ratings of a 12-min video using five key assessment criteria from the CPI assessment tool (criteria included safety, responsible behaviour, ethical practice, professional behaviour, legal practice)	<i>Key findings:</i> For safety, CIECP & CPI training was rated lower than CIECP only, CPI only, or no training. Post hoc analysis for responsible behaviour showed a significant difference between CIECP & CPI and CPI only training ($p = 0.005$), and CIECP & CPI training and no training ($p = 0.045$). Only half of the participants rated ethical practice or legal practice, which raised concerns but may have been related to limited information provided in the video performance <i>Educational impact:</i> Additional research required on assessment instruments, in particular validity and reliability

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Table 2. Continued

Study	Population, teaching format and context	Instructional methods	Programme content	Programme outcomes	Key findings and educational impact
3. Ferguson et al. (2010)	<i>Population:</i> Speech and Language Pathologists ($n = 240$) <i>Format:</i> In-person training, 1.5–2 h duration <i>Context:</i> Single training occasion, University setting	Didactic teaching of assessment concepts/ processes <i>Learning goals created for a written student scenario</i> <i>Provision of two short written student cases to gauge CEs' understanding of new assessment tool</i> <i>Workshops with facilitated large and small group activities</i>	Module 1: Introduction to COMPASS concepts and processes <i>Module 2: Assessment as learning</i> <i>Module 3: Implementing the assessment tool to assess and support marginal students</i> <i>Simulated assessment practice</i>	Qualitative analysis of learning goals pre- and post-training for evidence of educational concepts and new assessment approaches % of generic and occupational units of competencies evidenced in the learning goals pre- and post-training Evidence of PBA concepts - direct observation & VAS to show incremental development of competence	<i>Key findings:</i> Small positive shift in assessment language used in learning goals post-workshop. Overall, there was a similar proportion of main assessment concepts pre- and post-workshop, the exception being formative assessment, which increased from 6% to 15% <i>Little change in numbers of generic or occupational units of competency (evidence of assessment concepts) in learning goals</i> <i>Rating scale for entry-level descriptions and the need for direct observation in PBA were either partially or fully evident from most participants. 10% of participants did not reflect the need for direct observation in PBA, which may signpost the need for more training</i> <i>Educational impact:</i> Training workshops assist CEs' familiarisation with the new assessment tool and the use of a formative assessment approach

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Table 2. Continued

Study	Population, teaching format and context	Instructional methods	Programme content	Programme outcomes	Key findings and educational impact
4. Durham et al. (2012)	<i>Population:</i> Nurses ($n = 6$) <i>Format:</i> In-person training, 6 h duration <i>Context:</i> 2 training occasions, location not reported	Didactic teaching of assessment concepts/SOM role <i>Group discussion and reflection activities</i> <i>Review of practice case scenarios</i> <i>Generation of portfolios with evidence of learning and mock action plans</i> <i>Peer support group</i>	Exploration of SOM's role versus traditional mentor, NMC standards, accountability and assessment <i>Supporting failing students and those with additional needs</i> <i>Provision of effective feedback</i> <i>Recourses to support SOMs</i> <i>Review of practice case scenarios</i>	Evaluation of all aspects of the pilot programme using a six-point Likert scale (1 not useful – 6 very useful) Feedback identifying the least/most beneficial aspects of the programme SOM role assessments - OSCE exams with three scenarios of students and five OSCE stations	<i>Key findings:</i> All aspects of programme positively rated on Likert scale, but medians/IQR not reported Most beneficial aspect of programme: meeting the educational team, understanding the role of the SOM, familiarisation with assessment documents, structure of sessions, ability to pass two SOM assessments, presentations, role play/OSCE, discussion. Least beneficial aspects: timetabling, insufficient programme detail, scheduling of OSCE stations, role play. Frequencies were not provided Authors report OSCEs and student scenarios exams showed participants had a good knowledge of the SOM role <i>Educational impact:</i> The training programme was effective in preparing SOM to undertake the final clinical assessments with student nurses

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Table 2. Continued

Study	Population, teaching format and context	Instructional methods	Programme content	Programme outcomes	Key findings and educational impact
5. Bacon et al. (2015)	<i>Population:</i> Dietitians ($n = 9$) <i>Format:</i> Web-based self-directed learning, 7 h duration <i>Context:</i> Multiple contacts, online programme	Teaching and learning material delivered online <i>Provision of reading and video learning resources</i> <i>Problem-based learning activities</i> <i>Simulated assessment practice with 20 videos of students' performances available</i> <i>Online peer discussion forum</i>	Learning outcomes and development of competency-based assessment skills Competency standard, assessment context and applying entry-level competency standards in clinical settings Simulated assessment practice to consolidate credible and defensible practice Comparison of grades with experienced supervisor	Rating of CEs' confidence levels assessing student competence pre- and post-training (1–10 numerical rating scale) Rating one video of a student's performance pre- and post-training Feedback from focus group/ phone interviews, including how CEs ensure credible and defensible assessments Multiple-choice knowledge quiz post-training	<i>Key findings:</i> Pre-programme mean confidence rating 5.57 (range 2–9). No post-programme ratings available due to technical issues <i>Five participants (63%) rated student's performance as intermediate/beginner consistent with experienced supervisors. No post-programme ratings available due to technical issues</i> <i>Written feedback ($n = 4/9$, 44%) positive for (i) developing CEs' confidence to supervise students, (ii) utility of videos to understand performance and (iii) accessibility, utility and interdependence of teaching strategies</i> <i>Average score for quiz 86%</i> <i>Educational impact:</i> Online education programme is a viable solution to develop clinical assessment skills and confidence. Allows access across a wide geographical community

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Table 2. Continued

Study	Population, teaching format and context	Instructional methods	Programme content	Programme outcomes	Key findings and educational impact
6. Bacon et al. (2017)	Population: Dietitians ($n = 26$) Format: In-person training, duration not specified Context: Single training occasion, location not reported	Didactic teaching of assessment concepts/ processes Workshop with simulated assessment practice using one video of a student's performance Facilitated group discussion including sharing individual assessment grades and reflection on grades awarded	Review of recently revised assessment competencies Simulated assessment practice with opportunity to change rating and confidence scores after group discussion	Rating one video of a student's performance using VAS (1 novice –7 competent) and comparison of within-group ratings pre- and post-training Rating of CEs' confidence levels assessing a student's performance (numerical 1–10 rating scale) Global description of a student's overall performance	<i>Key findings:</i> No consistency in rating students' performances pre- or post-training. Pre-training median 4 (range 1–6) ($n = 11/26$), post-training median 4 (range 2–6) ($n = 16/26$) 35% ($n = 9/26$) of participants changed ratings to 4 after the training. No expert ratings were provided for video, therefore difficult to interpret the impact of these changes 31% ($n = 8/26$) increased assessment confidence, 27% ($n = 7/26$) reduced assessment confidence and 42% were unchanged ($n = 11$) post-training Qualitative themes identified (i) assessment discussion supports CEs' decisions, (ii) peer discussion during assessment leads to more holistic judgements and (iii) multiple sources of evidence/reflections are required for trustworthy assessment decisions <i>Educational impact:</i> Workplace assessment is a matter of consensus. Discussing judgements with colleagues can assist with a shared mental model of competence. The authors suggest that a programmatic assessment approach warrants further review for high-stakes workplace exams

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Table 2. Continued

Study	Population, teaching format and context	Instructional methods	Programme content	Programme outcomes	Key findings and educational impact
7. Moline et al. (2018)	<i>Population:</i> Radiation Therapists ($n = 24$) <i>Format:</i> In-person training, 1 h duration <i>Context:</i> Single training occasion, tertiary clinical care centres	Workshop with simulated assessment practice using one video of student's performances Facilitated group work	Simulated assessment practice using the standard evaluation tool Facilitated debriefing of grades awarded for simulated assessment practice and review of assessment criteria	Rating CEs' confidence levels assessing a student's performance using a Likert scale 1–5 (1 low - 5 high) pre- and post-training Rating CEs' confidence at 75 days post-training using the same scale (Likert 1–5)	<i>Key findings:</i> CEs' confidence rating a student's performance was significantly higher post-Workshop B compared to pre-workshop and at 75 days post- training ($p < 0.05$) <i>Educational impact</i> A short 1-h training workshop improves CEs' confidence to undertake competency assessments with the training effect persisting for at least 75 days

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Table 2. Continued

Study	Population, teaching format and context	Instructional methods	Programme content	Programme outcomes	Key findings and educational impact
8. Alpine et al. (2021)	<i>Population:</i> Physiotherapists ($n = 53$) <i>Format:</i> In-person training, 1.5 h duration <i>Context:</i> Single training occasion, University setting	Didactic teaching of assessment concepts Workshops based on Frame of Reference Training (FoRT) principles using simulated assessment practice with two videos of two different levels of performance Facilitated group discussion including sharing individual grades, CEs' rationale for same and reflection on grading	Review of assessment criteria and rating scale Introduction to FoRT principles Simulated assessment practice of 'poor' and 'very good' performances Facilitated group reflection and discussion of grades awarded for simulated assessment practice with an opportunity to change grades after group discussion Common pitfalls of assessment incorporated into group discussion	Rating videos of two different levels of students' performances pre- and post-group discussion against expert score Impact of demographics, professional experience, student supervision experience and professional grade on grading students	<i>Key findings:</i> Video 1 (poor performance): Alignment with expert ratings increased from 26% pre-discussion to 48% post discussion; 22% decreased scores from 4 (pass) to 3 (fail). For Video 2 (very good performance): Alignment with expert scores decreased from 43% pre-discussion to 41% post-discussion; 25% of participants lowered scores post discussion No significant difference based on gender and years qualified. Professional grade showed a difference for one learning outcome only. In terms of correlations, there was no significant relationship between supervision experience or the number of students supervised and change in scores <i>Educational impact:</i> Significant changes in CEs' grades after group discussion, particularly for borderline pass/fail students, and improved alignment with expert ratings. Positive benefits of FoRT to assist decision-making in PBA.

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Table 2. Continued

Study	Population, teaching format and context	Instructional methods	Programme content	Programme outcomes	Key findings and educational impact
9. Milne et al. (2022)	<i>Population:</i> Physiotherapists ($n = 109$) <i>Format:</i> In-person training, 5 h duration <i>Context:</i> Single training occasion, University setting	Didactic teaching of assessment concepts/ processes Workshop using simulated assessment practice with one video of a student's performance, followed by group discussion including rationale for ratings Facilitated group discussion and reflection	Reflection/learning activities to guide understanding of entry-level practice thresholds Consideration of personal biases Simulated assessment practice of a student's performances Grade calibration through peer discussion of grades awarded during simulation assessment practice moderated by facilitators Calibration of assessment standards by identifying appropriate behaviours for each APP domain	Rating CEs' knowledge, skills, attributes (22 items) and confidence (six statements) using a five-point Likert scale (1 disagree – 5 strongly agree) Appraisal of CEs' perception of their ability to assess a student's performance using the APP.	<i>Key findings:</i> Post-training, statistically significant change in mean scores related to perceived knowledge, skills and attributes, relevant to student assessment, and overall confidence undertaking an assessment using APP ($p < 0.001$) <i>Educational impact:</i> A one-day in-person workshop significantly improved knowledge, skills, attributes and confidence to assess a student's performances The workshop assisted CEs' understanding of the assessment tool and competency standards

Note(s): Abbreviations: APP - Assessment of Physiotherapy Practice, CE - Clinical Educator, CIECP - Clinical Instructor Education and Credentialing Programme, CPI - Clinical Performance Instrument, COMPASS - Competency Assessment in Speech Pathology, FoRT - Frame of Reference Training, NMC - Nursing and Midwifery Council, OSCE - Objective Structured Clinical Examination, SOM - sign-off mentor, VAS - Visual Analogue Scale

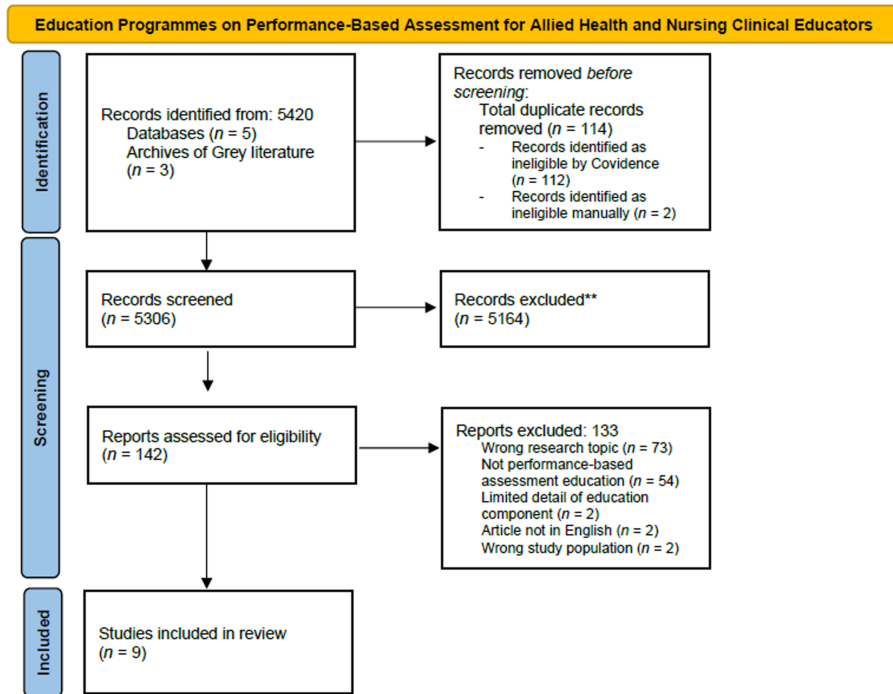


Figure 1. PRISMA flowchart

Alpine *et al.*, 2021; Milne *et al.*, 2022) in design, with most of the mixed methods studies using uncontrolled before and after design, i.e. pre- and post-training (Cross *et al.*, Ferguson *et al.*, 2010; Bacon *et al.*, 2015; Bacon *et al.*, 2017; Moline *et al.*, 2018; Alpine *et al.*, 2021; Milne *et al.*, 2022). PBA training was the main focus for $n = 7/9$ studies (Cross *et al.*, 2001; Ferguson *et al.*, 2010; Bacon *et al.*, 2015, 2017; Alpine *et al.*, 2021; Moline *et al.*, 2018; Milne *et al.*, 2022), one of which combined assessment with cultural competency training (Moline *et al.*, 2018). The two remaining studies focused on training programmes designed to educate nurses for a mentor role, and physiotherapists for a clinical instructor role (Durham *et al.*, 2012; Vendrely and Carter, 2004). Study aims were variable but most focused on examining variability in assessment practices including the influence of group discussion on grades (Bacon *et al.*, 2017; Alpine *et al.*, 2021; Milne *et al.*, 2022), the impact of training on assessors' confidence (Bacon *et al.*, 2015, 2017; Moline *et al.*, 2018; Milne *et al.*, 2022) or feedback on new assessment tools (Cross *et al.*, 2001; Ferguson *et al.*, 2010).

The following section addresses objectives (2) and (3). These objectives are also addressed in Table 2, which collates details on PBA programmes, specifically focusing on instructional methods, programme content, primary evaluation methods, key findings and educational impact.

Population, teaching format and context

All studies ($n = 9$) focused on a single profession, with physiotherapists ($n = 4/9$) (Cross *et al.*, 2001; Vendrely and Carter, 2004; Alpine *et al.*, 2021; Milne *et al.*, 2022) and dietitians ($n = 2/9$) (Bacon *et al.*, 2015, 2017) being the most common. Seven of the 11 training programmes consisted of a single training occasion (Cross *et al.*, 2001; Vendrely and Carter, 2004; Ferguson *et al.*, 2010; Bacon *et al.*, 2017; Moline *et al.*, 2018; Alpine *et al.*, 2021; Milne *et al.*, 2022) with

one programme delivering training over two occasions (Durham *et al.*, 2012), one online programme providing multiple self-directed contacts (Bacon *et al.*, 2015) and one programme which ran over 15 h but did not provide information on the number of training occasions (Vendrey and Carter, 2004). Overall, programme duration ranged from one to 15 h (median: 2.5, IQR: 1.25–6.5). One of the more extensive programmes delivered to physiotherapists required 15 h of education and provided a qualification as a credentialed clinical instructor after completion of a six-station exam. The locations of the training for two programmes were not reported (Durham *et al.*, 2012; Bacon *et al.*, 2017). Five programmes were hosted in a university setting (Cross *et al.*, 2001; Vendrey and Carter, 2004; Ferguson *et al.*, 2010; Alpine *et al.*, 2021; Milne *et al.*, 2022), one programme was hosted in the clinical setting to facilitate attendance of clinical staff (Moline *et al.*, 2018), and one programme was online (Bacon *et al.*, 2015). Where reported, training programmes were delivered by the practice education team ($n = 2/9$) (Durham *et al.*, 2012; Alpine *et al.*, 2021), university staff ($n = 3/9$) (Vendrey and Carter, 2004; Ferguson *et al.*, 2010; Moline *et al.*, 2018) and practice education managers ($n = 1/9$) (Milne *et al.*, 2022).

Instructional methods/teaching strategies

Direct instructional teaching was utilized as the main approach for three programmes (Cross *et al.*, 2001; Vendrey and Carter, 2004; Durham *et al.*, 2012) or was incorporated as part of the teaching methods for some sections in other programmes ($n = 6/9$) (Ferguson *et al.*, 2010; Bacon *et al.*, 2015, 2017; Moline *et al.*, 2018; Alpine *et al.*, 2021; Milne *et al.*, 2022). Five studies utilized an interactive workshop to develop PBA knowledge and skills (Ferguson *et al.*, 2010; Bacon *et al.*, 2017; Moline *et al.*, 2018; Alpine *et al.*, 2021; Milne *et al.*, 2022). These workshops included group discussion and reflection as key teaching strategies led by a facilitator. The web-based programme also used group discussion as a teaching approach but in a written forum (Bacon *et al.*, 2015). Three programmes (Ferguson *et al.*, 2010; Durham *et al.*, 2012; Bacon *et al.*, 2015) used written reflections to explore different aspects of the assessment process, one of which was documented as an evidence-based learning portfolio (Durham *et al.*, 2012). Other peer learning strategies such as small and large group activities ($n = 1/9$) (Ferguson *et al.*, 2010) and peer support groups were identified ($n = 2/9$) (Durham *et al.*, 2012; Bacon *et al.*, 2015).

All studies bar one (Durham *et al.*, 2012) used simulated assessment of students' performances with video vignettes (Cross *et al.*, 2001; Bacon *et al.*, 2015, 2017; Moline *et al.*, 2018; Alpine *et al.*, 2021; Milne *et al.*, 2022) or written descriptions of students' performance (Vendrey and Carter, 2004; Ferguson *et al.*, 2010). Teaching material was generally delivered in advance of simulated assessment practice (Ferguson *et al.*, 2010; Durham *et al.*, 2012; Bacon *et al.*, 2017; Moline *et al.*, 2018; Alpine *et al.*, 2021; Milne *et al.*, 2022). Three workshops where simulated assessment was used described how participants shared their assessment scores and rationale for their grades, and offered participants an opportunity to change their original grades allocated to students' performances after the group discussion (Bacon *et al.*, 2017; Alpine *et al.*, 2021; Milne *et al.*, 2022).

One programme utilized an online self-directed learning approach, providing participants access to four learning modules on multiple occasions, including additional learning resources such as self-monitoring activities, suggested reading and pre- and post-training knowledge quizzes (Bacon *et al.*, 2015). This study reported designing their web-based programme on a constructivist theory with a learner-centred approach, authentic problem-based learning with metacognitive activities and online collaboration. The pedagogical approach was not specified in most studies ($n = 8/9$) (Cross *et al.*, 2001; Vendrey and Carter, 2004; Ferguson *et al.*, 2010; Durham *et al.*, 2012; Bacon *et al.*, 2017; Moline *et al.*, 2018; Alpine *et al.*, 2021; Milne *et al.*, 2022).

Content and assessment concepts and theories

The training programmes focused mainly on assessment concepts, assessment processes, simulated grading practice and differentiating grading (Table 2). All programmes provided

information on using assessment tools and performance criteria. Assessment concepts addressed several areas including the need for clear instructions, comprehensive description of different levels of performance, understanding what is being assessed, managing different levels of performance, explaining features of good and bad performances and evidencing credible and defensible assessment (Cross *et al.*, 2001; Vendrely and Carter, 2004; Ferguson *et al.*, 2010; Durham *et al.*, 2012; Bacon *et al.*, 2015, 2017). Other fundamental constructs such as assessment as learning, and formative and summative assessment were included in two training programmes (Cross *et al.*, 2001; Ferguson *et al.*, 2010). Understanding competency-based assessment was explored in one programme for dietitians which centred on defining, developing and applying performance standards and consideration of how context impacts grading of competence (Bacon *et al.*, 2015). Two longer programmes reviewed the roles and responsibilities of clinical instructors, teaching methods and theory, and legal issues in clinical education (Vendrely and Carter, 2004; Durham *et al.*, 2012).

Outcomes and educational impact of training programmes

The most commonly used outcome measure following training was rating of perceived confidence undertaking PBA ($N = 4/9$) (Bacon *et al.*, 2015; Bacon *et al.*, 2017; Moline *et al.*, 2018; Milne *et al.*, 2022). Three studies appraised pre- and post-ratings of students' clinical performance in video vignettes, with participants' rating one to six videos (Cross *et al.*, 2001; Bacon *et al.*, 2017; Alpine *et al.*, 2021). Two of the three studies compared participants' grades with university academic or practice tutors' scores (Cross *et al.*, 2001; Alpine *et al.*, 2021), and the third compared participants' own ratings from pre-to post-training (Bacon *et al.*, 2017). Two of the three studies demonstrated an improved alignment of scores post-group discussion (Bacon *et al.*, 2017; Alpine *et al.*, 2021). The third study, which utilised two different assessment tools, showed accordance with academic scores using one assessment tool but more variability using the other assessment tool, particularly with the mid-level student performances (Cross *et al.*, 2001). The training programme delivered online did not receive post-training ratings from participants, and this was not evaluated as part of the study (Bacon *et al.*, 2015). Other outcome measures used in included studies examined self-reported changes in assessment knowledge, understanding and skills following training (Ferguson *et al.*, 2010; Bacon *et al.*, 2015; Milne *et al.*, 2022).

A variety of qualitative methods were used to assess outcomes in four studies (Cross *et al.*, 2001; Ferguson *et al.*, 2010; Durham *et al.*, 2012; Bacon *et al.*, 2015). One study reviewed written learning outcomes created by participants for student scenarios to evidence participants' understanding of assessment concepts and generic and occupational competencies in a new assessment tool (Ferguson *et al.*, 2010). Another study used written feedback to rationalize clinical educators' preference between two assessment tools (Cross *et al.*, 2001). The other studies evaluated participants' views of the programmes, using either focus groups and online interviews (Bacon *et al.*, 2015) or written feedback on the least and most beneficial aspects of training topics (Durham *et al.*, 2012).

Key findings

PBA training programmes of long or short duration reported a positive impact on participants' perceived PBA knowledge, skills (Ferguson *et al.*, 2010; Bacon *et al.*, 2015; Milne *et al.*, 2022) and confidence (Bacon *et al.*, 2015, 2017; Moline *et al.*, 2018; Milne *et al.*, 2022). In addition, studies indicate training assisted clinical educators' understanding of assessment concepts, tools and standards (Ferguson *et al.*, 2010; Alpine *et al.*, 2021; Milne *et al.*, 2022). Positive educational outcomes based on clinical educators' rating of their knowledge, skills and confidence post-training were provided by in-person interactive workshops (Cross *et al.*, 2001; Ferguson *et al.*, 2010; Bacon *et al.*, 2015, 2017; Moline *et al.*, 2018; Alpine *et al.*, 2021; Milne *et al.*, 2022).

Discussion

The primary aim of this scoping review was to synthesize the available literature on PBA training for allied health and nursing clinical educators engaged in entry-level professional education programmes. These findings will be discussed with a view to identifying any gaps in the existing research (objective 3).

Extent and range of studies

Only nine studies met the inclusion criteria for this review, indicating a dearth of research in a core area of training for clinical educators. A recent scoping review of rater training in medical education generated only 14 studies (Vergis *et al.*, 2020), also indicating a lack of research on this subject matter in medicine. Considering PBA in the clinical environment is the best way of evaluating professional competence and is a key element in curriculum appraisal; therefore, more training programmes and studies may have been predicted (Govaerts and van der Vleuten, 2013; Kogan *et al.*, 2023a, b). This review identified studies representing only five of the 12 professions outlined in the inclusion criteria, raising concerns about how practitioners across nursing and allied health are prepared to engage in PBA. Studies were limited to Australia, USA, Canada, United Kingdom and Ireland, confining the review to a Western education perspective. Study participant numbers were relatively small, with six of the studies comprising less than 50 participants, including two pilot studies with only six (Durham *et al.*, 2012) and nine participants (Bacon *et al.*, 2015) respectively. As PBA is completed by clinical educators to determine a students' readiness for autonomous practice, training to implement these high-stakes exams is essential for all healthcare professionals to ensure safe, work-ready practitioners (Alpine *et al.*, 2021; Holmboe and Kogan, 2018).

Study design

Most studies were of mixed methods or quantitative design, with no randomized control trials (RCTs). Programme evaluation across the studies was variable. In one study, key metrics such as median scores and ranges of programme ratings (Durham *et al.*, 2012) and in the online study using a before-after design, clinical educators were unable to report post-training ratings due to technical issues (Bacon *et al.*, 2015). This contrasts with medical education rater training programmes where nine of the 14 programmes included in the Vergis *et al.* (2020) scoping review were RCTs (Vergis *et al.*, 2020). In six of the nine RCTs, training showed no effect on grading between the training and control groups. Of the remaining three RCTs, one demonstrated small improvements in grading accuracy. The second showed improvement in the quality of evaluations reported, and the third indicated a significant improvement in inter-rater reliability that persisted for eight months post-training (Holmboe *et al.*, 2004), which consisted of an in-person extensive programme run over four days. The scoping review concluded that overall, the quality of the studies was poor to moderate (Vergis *et al.*, 2020).

In our scoping review, most studies used self-report questionnaires measuring perceptions of assessment practice, confidence and/or knowledge pre- and post-training. Training workshops using video vignettes or written descriptions of student behaviours generally rated pre- and post-training scores of students' performance against an expert or ratings from other participants (Cross *et al.*, 2001; Bacon *et al.*, 2015, 2017; Moline *et al.*, 2018; Alpine *et al.*, 2021; Milne *et al.*, 2022). Studies generally reported a positive impact using video vignettes, with clinical educators' post-training rating scores aligned with those of experts (Bacon *et al.*, 2017; Alpine *et al.*, 2021; Milne *et al.*, 2022). This pre-post appraisal is a commonly used method to assess the impact of training interventions among healthcare professionals; however, the absence of a control group limits interpretation of the training effect, as a known limitation of pre-post studies is their inability to establish causality.

Length of training programmes

Education programs ranged from 1–15 h, with the longer, more didactic programmes providing participants with qualifications for practice education roles (Vendrey and Carter, 2004; Durham *et al.*, 2012). In our review, five training programmes used a single training intervention of 2.5 h or less, and reported positive impacts on participants' ratings of skills, knowledge or confidence (Cross *et al.*, 2001; Ferguson *et al.*, 2010; Moline *et al.*, 2018; Alpine *et al.*, 2021; Milne *et al.*, 2022). However, there was a wide disparity of evaluation methods used across the five studies, with only one study appraising longitudinal effect (Moline *et al.*, 2018). Variation in the length of training programmes was also evident in the scoping review of rater training programmes in medical education, with programmes running from one hour to four days (Vergis *et al.*, 2020). The optimal length of training programmes is yet to be established, but an important consideration is that they are not prohibitive for busy clinicians due to excessive duration. Previous research reviewing the duration of educational workshops delivered to doctors across Australia concluded a two-hour workshop strikes the optimal balance – sufficient to address educational content while remaining feasible within clinician' time constraints (Gallagher and Pullon, 2011). Even shorter duration workshops such as a single hour of training offered by Moline *et al.* (2018), permit "bite sized" interventions which may be particularly useful when implemented in the clinical workplace (Moline *et al.*, 2018). This study demonstrated continued retention of confidence when conducting PBA using a self-report questionnaire at 75 days post-training (Moline *et al.*, 2018). As time is one of the main barriers identified to undertaking training, shorter workshops may provide a useful training option (Siriani *et al.*, 2020). Further exploration of the length and format of training programmes and how training translates into the workplace environment warrants further attention and evaluation.

Online versus in-person training

Perhaps surprisingly only one study in this review used an online method of delivery, offering participants the opportunity to access learning material based on their availability (Bacon *et al.*, 2015). This is despite evidence to show remote education has grown in popularity over the years and has been proven to have similar outcomes to in-person education (Macznik *et al.*, 2015). Online programmes have been used to deliver PBA training to medical clinical educators with positive results (Kogan *et al.*, 2023a, b) and may be accessed by clinical educators located across wide geographical areas, removing the burden of travel (Bacon *et al.*, 2015). More research is required to explore if this is a feasible option for PBA education across other healthcare educators.

Interactive workshops with video vignettes

Interactive workshops using simulated assessment practice, preceded by didactic education on a range of assessment concepts, were the most common instructional method used in seven of the nine training programmes (Alpine *et al.*, 2021; Bacon *et al.*, 2015, 2017; Ferguson *et al.*, 2010; Cross *et al.*, 2001; Milne *et al.*, 2022; Moline *et al.*, 2018). Six of these training programmes used one or more video vignettes of scripted clinical encounters, generally developed by the authors and reviewed by clinical experts, providing snapshots of students' performances at different levels, from high performing to failing students (Cross *et al.*, 2001; Alpine *et al.*, 2021; Bacon *et al.*, 2015; Bacon *et al.*, 2017; Milne *et al.*, 2022; Moline *et al.*, 2018). Videos delivered tangible views of authentic clinical interactions, giving clinical educators an opportunity to observe and make a judgment on a student's performance. The use of multiple video vignettes as part of training programmes may result in difficulty recalling the content of each video, but on the other hand, multiple videos provide a persuasive picture of the students' performance. One included study used six videos in a single training session with no recall issues identified (Cross *et al.*, 2001). In this study, Cross *et al.* (2001) reported persistent variability in clinical educators' ratings of students' performances post-training. However, this

study evaluated two different assessment forms when rating the six videos, adding complexity to the rating process which may have impacted rating accuracy (Cross *et al.*, 2001).

Collaborative dialogue and role of facilitator

PBA workshops with stimulated collaborative dialogue and reflection were found to generally impact positively on participants perceived knowledge, skills and confidence of their assessment practice (Ferguson *et al.*, 2010; Bacon *et al.*, 2015, 2017; Moline *et al.*, 2018; Milne *et al.*, 2022). Collaborative learning fostered a shared “mental model” among clinical educators as they discussed their rationale for grading students with different levels of performance. This enabled clinical educators to hear the perspectives of fellow participants and articulate their own marking standards. Similarly, the online training programmes adopted this instructional strategy in a written format, encouraging engagement and building a community of practice through discussion boards (Bacon *et al.*, 2015). However, it was noted that participation in the discussion forum was lower than anticipated, which may be due to the variable work schedules and time constraints of clinical educators.

During interactive training programmes workshops, the role of the facilitator gained little attention. In most studies, university-based practice education or academic staff experienced in PBA facilitated the workshops (Ferguson *et al.*, 2010; Bacon *et al.*, 2017; Moline *et al.*, 2018; Alpine *et al.*, 2021; Milne *et al.*, 2022). However, further details of their role or approach were not provided, despite evidence that facilitators’ knowledge, skills and delivery are essential to successful engagement with training programmes (O’Sullivan and Irby, 2011; Milne *et al.*, 2022).

Pedagogy of training programs

The specific pedagogy or teaching and learning approach of training programmes was not reported in the majority of included studies (Cross *et al.*, 2001; Vendrely and Carter, 2004; Ferguson *et al.*, 2010; Durham *et al.*, 2012; Bacon *et al.*, 2017; Moline *et al.*, 2018; Alpine *et al.*, 2021; Milne *et al.*, 2022). In medical education, assessment training has been classified into four recognized training approaches: (1) Rater Error Training, (2) Behavioural Observation Training, (3) Performance Dimension Training and (4) Frame of Reference Training (Woehr and Huffcut, 1994). In this review, only one study implemented Frame of Reference Training principles (Alpine *et al.*, 2024); however, other studies appeared to be based on these approaches, but this was not explicitly stated (Bacon *et al.*, 2017; Milne *et al.*, 2022). Describing the specific pedagogical approaches used in these training programmes improves comparability across studies, including clear descriptions of the training methods – such as workshop format, facilitator roles and learning modalities – enabling researchers and programme planners to evaluate effectiveness, replicate successful strategies and tailor programmes to meet evolving clinical and educational needs.

Strengths and limitations

This review specifically sought to explore the literature on PBA training programmes for allied health and nursing clinical educators, however it yielded only nine studies. Only five of the 12 professions included in the eligibility criteria were represented in the studies. Given the variability in education programmes regarding grading during clinical placements, it is possible that PBA training is perceived as a lower priority within clinical educator training, particularly when students are assessed on a pass/fail rather than a numerical basis. This may in part explain the lack of focus on this area of training and highlights the need to review or develop national educator frameworks to ensure PBA training is embedded in educator training programmes across all professions.

The targeted focus of the review eligibility criteria, which required information on the design and/or implementation and/or evaluation of PBA training programmes, may have resulted in a small number of studies, with studies comprising brief descriptions of PBA

rejected. The search strategy was limited from the year 2000–2025, excluding older research. However, this timeframe spans over 2 decades during which the majority of focused research on PBA is likely to have occurred. This period coincides with the rapid expansion of medical education research and a shift towards competency-based assessment frameworks and authentic assessment methods.

Several studies lacked details regarding the contents of the training programme, educational framework, length of programme and location of training environment. This limits our understanding of these programme and interpretation of study findings. Furthermore, the use of varied outcome measures across studies makes direct comparison challenging. This contrasts with the scoping review by Vergis *et al.* (2020), where most studies employed inter-rater reliability as a common metric, enabling clearer comparison of results.

PBA training programmes targeting medical clinical educators were not included in this review for a number of reasons articulated in the introduction section (Alpine *et al.*, 2021). Comparisons with PBA training in medical education were integrated into the discussion, noting some similarities in instructional approaches across professions. Despite these similarities, medical education typically provides explicit categorisation of education frameworks, which was largely absent from studies in this review. A clearer description of pedagogical approaches in studies may assist reducing the knowledge gap when translating instructional methods into consistent practice.

Conclusions

The overarching purpose of clinical educator training in PBA is to improve the quality of learner assessment. Therefore, preparing healthcare professionals to implement work-based assessment by providing opportunities to engage in training and deliberate practice requires ongoing attention. Despite the limited number of studies identified in this review, it provides important preliminary evidence that may help guide the design and implementation of PBA, as well as highlighting gaps in the existing literature.

This review found that within the current literature, simulated assessment practice using one or more video vignettes delivered using an in-person workshop format was the most consistently used training intervention, supporting clinical educators to develop their assessment knowledge, skills, confidence and rating accuracy (Cross *et al.*, 2001; Ferguson *et al.*, 2010; Bacon *et al.*, 2017; Moline *et al.*, 2018; Alpine *et al.*, 2021; Milne *et al.*, 2022). Online and longitudinal education programmes to develop clinical educators' knowledge of PBA requires further exploration, with recent studies using these formats reporting favourable outcomes.

While short once-off workshops have been shown to have a positive immediate impact on clinical educators' ratings, knowledge, skills and confidence, the extent of retention of this knowledge and the ability to translate classroom or online learning into the workplace environment requires further research. This review highlights other gaps in PBA research, particular regarding optimal programme length, pedagogical frameworks, translational of training into the work environment and longitudinal outcomes.

With the expansion of third level healthcare professional education programmes to meet workforce demands, and ongoing need for reliable and accurate assessment of competency, this review provided a clear synthesis of what is known about PBA training programmes for the allied health and nursing professionals. Considering the significant cost of training and resource investment by universities alongside, time commitment from healthcare professionals, our findings offer valuable insights to support universities in designing effective and sustainable PBA training programme moving forward.

References

- Addis, G. and Loughrey, N. (2025), "Experiences and evaluation of the new standards for student supervision and assessment", *British Journal of Nursing*, Vol. 34 No. 1, pp. 36–40, doi: [10.12968/bjon.2024.0334](https://doi.org/10.12968/bjon.2024.0334).

- Alpine, A., O'Connor, A., McGuinness, M. and Barrett, E.M. (2021), "Performance-based assessment during clinical placement: Cross-sectional investigation on a training workshop for practice educators", *Nursing and Health Sciences*, Vol. 23 No. 1, pp. 113-122, doi: [10.1111/nhs.12768](https://doi.org/10.1111/nhs.12768).
- Alpine, L., Barrett, E.M., Broderick, J., Mockler, D. and O'Connor, A. (2024), "Education programmes on performance-based assessment for allied health and nursing clinical educators: a scoping review protocol", *HRB Open Research*, Vol. 6 No. 11, p. 11, doi: [10.12688/hrbopenres.13669.2](https://doi.org/10.12688/hrbopenres.13669.2).
- Arskey, H. and O'Malley, L. (2005), "Scoping studies: towards a methodological framework", *International Journal of Social Research Methodology*, Vol. 8 No. 1, pp. 19-32, doi: [10.1080/1364557032000119616](https://doi.org/10.1080/1364557032000119616).
- Bacon, R., Williams, L.T., Grealish, L. and Jamieson, M. (2015), "Competency-based assessment for clinical supervisors: design-based research on a web-delivered program", *Journal of Medical Internet Research*, Vol. 4 No. 1, p. e26, doi: [10.2196/resprot.3893](https://doi.org/10.2196/resprot.3893).
- Bacon, R., Holmes, K. and Palermo, C. (2017), "Exploring subjectivity in competency-based assessment judgements of assessors", *Nutrition and Dietetics*, Vol. 74 No. 1, pp. 357-364, doi: [10.1111/1747-0080.12326](https://doi.org/10.1111/1747-0080.12326).
- Barrett, E.M., Belton, A. and Alpine, L.M. (2021), "Supervision models in physiotherapy practice education: student and practice educator evaluations", *Physiotherapy Theory and Practice*, Vol. 37 No. 11, pp. 1185-1198, doi: [10.1080/09593985.2019.1692393](https://doi.org/10.1080/09593985.2019.1692393).
- Brown, R.A. and Crookes, P.A. (2017), "How do expert clinicians assess student nurse competency during workplace experience? A modified nominal group approach to devising a guidance package", *Collegian*, Vol. 24 No. 3, pp. 219-225, doi: [10.1016/j.colegn.2016.01.004](https://doi.org/10.1016/j.colegn.2016.01.004).
- Cross, V., Hocks, C. and Barwell, F. (2001), "Exploring the Gap between Evidence and Judgement: using video vignettes for practice-based assessment of physiotherapy undergraduates", *Assessment and Evaluation in Higher Education*, Vol. 26 No. 3, pp. 189-212, doi: [10.1080/02602930120052369](https://doi.org/10.1080/02602930120052369).
- Daudt, H.M.L., van Mossel, C. and Scott, S.J. (2013), "Enhancing the scoping study methodology: a large inter-professional team's experience with Arksey and O'Malley's framework", *BMC Medical Research Methodology*, Vol. 13 No. 1, p. 48, doi: [10.1186/1471-2288-13-48](https://doi.org/10.1186/1471-2288-13-48).
- Dudding, C.C., McCready, V., Nunez, L.M. and Procaccini, S.J. (2017), "Clinical supervision in speech-language pathology and audiology in the United States: development of a professional speciality", *The Clinical Supervisor*, Vol. 36 No. 2, pp. 161-181, doi: [10.1080/07325223.2017.1377663](https://doi.org/10.1080/07325223.2017.1377663).
- Duffy, K. and Hardicre, J. (2007), "Supporting failing students in practice. 1: assessment", *Nursing Times*, Vol. 103 No. 47, pp. 28-29.
- Durham, W.J., Kingston, P. and Skyes, C. (2012), "Implementing a sign off preparation workshop-a tripartite approach", *Nursing Education Times*, Vol. 32 No. 3, pp. 273-277, doi: [10.1016/j.nedt.2011.03.014](https://doi.org/10.1016/j.nedt.2011.03.014).
- England, A., Geers-van Gemeren, S., Henner, A., Kukkes, T., Pronk-Larive, D., Rainford, L. and McNulty, A.C. (2017), "Clinical radiography education across Europe", *Radiography*, Vol. 23, pp. S7-S15, doi: [10.1016/j.radi.2017.05.011](https://doi.org/10.1016/j.radi.2017.05.011).
- Epstein, R.M. and Hundert, E.M. (2002), "Defining and assessing professional competence", *Journal of the American Medical Association*, Vol. 287 No. 2, pp. 226-235, doi: [10.1001/jama.287.2.226](https://doi.org/10.1001/jama.287.2.226).
- Ferguson, A., McAllister, S., Lincoln, M., McAllister, L. and Owen, S. (2010), "Becoming familiar with competency-based student assessment: an evaluation of workshop outcomes", *International Journal of Speech Language Pathology*, Vol. 12 No. 6, pp. 545-554, doi: [10.3109/17549507.2011.491128](https://doi.org/10.3109/17549507.2011.491128).
- Finstad, I., Knutstad, U., Havnes, A. and Sagbakken, M. (2022), "The paradox of an expected level: the assessment of nursing students during clinical practice - a qualitative study", *Nurse Education in Practice*, Vol. 61, p. N.PAG, doi: [10.1016/j.nepr.2022.103332](https://doi.org/10.1016/j.nepr.2022.103332).
- Gallagher, P. and Pullen, S. (2011), "Travelling educational workshops for clinical teachers: are they worthwhile?", *The Clinical Teacher*, Vol. 8 No. 1, pp. 52-56, doi: [10.1111/j.1743-498X.2010.00421](https://doi.org/10.1111/j.1743-498X.2010.00421).

- Gingerich, A., Regerhr, G. and Eva, K.W. (2011), "Rater-based assessments as social judgements: rethinking the etiology of rater errors", *Academic Medicine*, Vol. 86 Suppl. 10, pp. S1-S7, doi: [10.1097/ACM.0b013e31822a6cf8](https://doi.org/10.1097/ACM.0b013e31822a6cf8).
- Gorman, C.A. and Rentsch, J.R. (2009), "Evaluating frame-of-reference rater training effectiveness using performance schema accuracy", *Journal of Applied Psychology*, Vol. 94 No. 5, pp. 1336-1344, doi: [10.1037/a0016476](https://doi.org/10.1037/a0016476).
- Govaerts, M. and van der Vleuten, C.P. (2013), "Validity in work-based assessment: expanding our horizons", *Medical Education*, Vol. 47 No. 12, pp. 1164-1174, doi: [10.1111/medu.12289](https://doi.org/10.1111/medu.12289).
- Hanson, J.L., Rosenberg, A.A. and Lane, J.L. (2013), "Narrative descriptions should replace grades and numerical ratings for clinical performance in medical education in the United States", *Frontiers in Psychology*, Vol. 4, p. 668, doi: [10.3389/fpsyg.2013.00668](https://doi.org/10.3389/fpsyg.2013.00668).
- Heaslip, V. and Scammell, J.M. (2012), "Failing underperforming students: the role of grading in practice assessment", *Nurse Education in Practice*, Vol. 12 No. 2, pp. 95-100, doi: [10.1016/j.nepr.2011.08.003](https://doi.org/10.1016/j.nepr.2011.08.003).
- Hemmer, P.A., Dadekian, G.A., Terndrup, C., Pangara, L.N., Weisbrod, A.B., Corriere, M.D., Rodriguez, R., Short, P. and Kelly, W.F. (2015), "Regular formal evaluation sessions are effective as frame-of-reference training for faculty evaluators of clerkship medical students", *Journal of General Internal Medicine*, Vol. 30 No. 9, pp. 1313-1318, doi: [10.1007/s11606-015-3294-6](https://doi.org/10.1007/s11606-015-3294-6).
- Holmboe, E.S. and Kogan, J.R. (2018), "Observation in medical education: time for a broader conversation?", *Families, Systems and Health*, Vol. 36 No. 1, pp. 17-19, doi: [10.1037/fsh0000343](https://doi.org/10.1037/fsh0000343).
- Holmboe, E.S., Hawkins, R.E. and Hout, S.J. (2004), "Effects of training in direct observation of medical residents' clinical competence: a randomised trial", *Annals of Internal Medicine*, Vol. 140 No. 11, pp. 874-881, doi: [10.7326/0003-4819-140-11-200406010-00008](https://doi.org/10.7326/0003-4819-140-11-200406010-00008).
- Immonen, K., Oikarainen, A., Tomietto, M., Kaariainen, M., Tuomikoski, A.M., Miha Kaucic, B., Riklikiene, O., Vizcaya-Moreno, M.F., Perez-Canaveras, R.M., De Raeve, P. and Mikkonen, K. (2010), "Assessment of nursing students' competence in clinical practice: a systematic review of reviews", *International Journal of Nursing Studies*, Vol. 100, 103414, Dec, doi: [10.1016/j.ijnurstu.2019.103414](https://doi.org/10.1016/j.ijnurstu.2019.103414).
- Kilgour, A.J. (2011), "Assessment of competency in radiography students – a new approach", *The Radiographer: The Official Journal of the Australian Institute of Radiography*, Vol. 58 No. 3, pp. 32-37, doi: [10.1002/j.2051-3909.2011.tb00153.x](https://doi.org/10.1002/j.2051-3909.2011.tb00153.x).
- Kogan, J.R., Conforti, L.N., Bernabeo, E., Lobst, W. and Holmboe, E. (2015), "How faculty members experience workplace-based assessment rater training: a qualitative study", *Medical Education*, Vol. 49 No. 7, pp. 692-708.
- Kogan, J.R., Hatala, R., Huaser, K.R. and Holmboe, E. (2017), "Guidelines: the do's, don't and don't knows of direct observation of clinical skills in medical education", *Perspective in Medical Education*, Vol. 6 No. 5, doi: [10.1007/s40037-017-0376-7](https://doi.org/10.1007/s40037-017-0376-7).
- Kogan, J.R., Conforti, L.N. and Holmboe, E.S. (2023a), "Faculty perceptions of frame of reference training to improve workplace-based assessment", *Journal of Graduate Medical Education*, Vol. 15 No. 1, pp. 81-91, doi: [10.4300/JGME-D-22-00287.1](https://doi.org/10.4300/JGME-D-22-00287.1).
- Kogan, J.R., Dine, C.J., Conforti, L.N. and Holmboe, E.S. (2023b), "Can rater training improve the quality and accuracy of workplace-based assessment narrative comments and entrustment ratings? A randomised controlled trial", *Academic Medicine*, Vol. 98 No. 2, pp. 237-247, doi: [10.1097/ACM.0000000000004819](https://doi.org/10.1097/ACM.0000000000004819).
- Levac, D., Colquhoun, H. and O'Brien, K.K. (2010), "Scoping studies: advancing the methodology", *Implementation Science*, Vol. 5 No. 69, 69, doi: [10.1186/1748-5908-5-69](https://doi.org/10.1186/1748-5908-5-69).
- Macznik, A.K., Riberio, D.C. and Baxter, G.D. (2015), "Online technology use in physiotherapy teaching and learning: a systematic review of effectiveness and users' perceptions", *BMC Medical Education*, Vol. 15 No. 160, 160, doi: [10.1186/s12909-015-0429-8](https://doi.org/10.1186/s12909-015-0429-8).

- McCarthy, B. and Murphy, S. (2010), "Preceptors' experiences of clinically educating and assessing undergraduate nursing students: as Irish context", *Journal of Nursing Management*, Vol. 18 No. 2, pp. 234-244, doi: [10.1111/j.1365-2834.2010.01050.x](https://doi.org/10.1111/j.1365-2834.2010.01050.x).
- Meyer, I.S., Louw, A. and Ernstzen, D. (2019), "Perceptions of physiotherapy clinical educators' dual roles as mentors and assessors: influence on teaching-learning relationships", *South African Journal of Physiotherapy*, Vol. 75 No. 1, p. 468, doi: [10.4102/sajp.v75i1.468](https://doi.org/10.4102/sajp.v75i1.468).
- Mikkonen, K., Kuivila, H.M., Sjogren, T., Korpi, H., Koskinen, C., Koskinen, M., Koivula, M., Koskimaki, M., Lanteenmaki, M., Saaranen, T., Sormunen, M., Salminen, L., Maki-Hakola, H., Wallin, O., Halopainen, A., Tuomikoski, A.M. and Kaarinainen, M. (2022), "Social, health care and rehabilitation educators' competence in professional education-Empirical testing of a model", *Health and Social Care in the Community*, Vol. 33 No. 1, pp. e75-e85, doi: [10.1111/hsc.13414](https://doi.org/10.1111/hsc.13414).
- Milne, D.L., Sheikh, A.I., Patterson, S. and Wilkinson, A. (2011), "Evidence-based training for clinical supervisors: a systematic review of 11 controlled studies", *The Clinical Supervisor*, Vol. 30 No. 1, pp. 545-554, doi: [10.1080/07325223.2011.564955](https://doi.org/10.1080/07325223.2011.564955).
- Milne, N., Dunwoodie, R., Kirwan, G., Palmer, T., Gauchwin, J., Donovan, M., Dyson, C., Hams, A. and Hills, A. (2022), "Educating the educators: evaluation of a standardised format, one-day clinical educator workshop on the assessment of physiotherapy student performance in clinical placement", *Australian Journal of Clinical Education*, Vol. 11 No. 1, pp. 1-18, doi: [10.53300/001c.32993](https://doi.org/10.53300/001c.32993).
- Moline, R.L., Peacock, M. and Moline, K. (2018), "Teaching the teacher: the impact of a workshop developed for radiation therapists", *Journal of Medical Imaging and Radiation Sciences*, Vol. 49 No. 2, pp. 179-186, doi: [10.1093/ptj/pzac063](https://doi.org/10.1093/ptj/pzac063).
- Myers, K., Bilyer, C., Covington, K. and Sharp, A. (2022), "Clinical teaching competencies in physical therapists education: a modified delphi study", *Physical Therapy*, Vol. 102 No. 7, doi: [10.1093/ptj/pzac063](https://doi.org/10.1093/ptj/pzac063).
- Newstead, C., Johnson, C., Nisbet, G. and McAllister, L. (2017), "Physiotherapy Clinical Education in Australia: development and validation of a survey instrument to profile clinical educators' characteristics, experience and training requirements", *New Zealand Journal of Physiotherapy*, Vol. 45 No. 3, pp. 154-169, doi: [10.15619/NZJP/45.2.07](https://doi.org/10.15619/NZJP/45.2.07).
- Ogden, P.E., Edwards, J., Howell, M., Via, R.M. and Song, J. (2008), "The effect of two different faculty development interventions on third year clerkship performance evaluation", *Family Medicine*, Vol. 40 No. 5, pp. 333-338.
- O'Brien, A., McNeil, K. and Dawson, A. (2019), "The student experience of clinical supervision across health disciplines – perspectives and remedies to enhance clinical placement", *Nurse Education in Practice*, Vol. 34, pp. 34-55, doi: [10.1016/j.nepr.2018.11.006](https://doi.org/10.1016/j.nepr.2018.11.006).
- O'Connor, A., Cantillon, P., McGarr, O. and McCurtain, A. (2018), "Navigating the system: physiotherapy student perception of performance-based assessment", *Medical Teacher*, Vol. 40 No. 9, pp. 928-933, doi: [10.1080/0142159X.2017.1416071](https://doi.org/10.1080/0142159X.2017.1416071).
- O'Connor, A., Cantillon, P., Parker, M. and McCurtain, A. (2019), "Juggling roles and generating solutions: practice-based educators' perceptions of performance-based assessment of physiotherapy students", *Physiotherapy*, Vol. 105 No. 4, pp. 446-452, doi: [10.1016/j.physio.2018.11.008](https://doi.org/10.1016/j.physio.2018.11.008).
- O'Sullivan, P.S. and Irby, D.M. (2011), "Reframing research on faculty development", *Academic Medicine*, Vol. 86 No. 4, pp. 421-428, doi: [10.1097/ACM.0b013e31820dc058](https://doi.org/10.1097/ACM.0b013e31820dc058).
- Peters, M.D., Godfrey, C., McInerney, P., Munn, Z., Tricco, A.C. and Khalil, H. (2017), *Scoping Reviews*, Joanna Briggs Institute reviewer's manual', JBI, Adelaide.
- Peters, M.D.J., Godfrey, C., McInerney, P., Khalil, H., Larsen, P., Marnie, C., Pollock, D., Tricco, A.C. and Munn, Z. (2022), "Best practice guidance and reporting items for the development of scoping review protocols", *JBI Evidence Synthesis*, Vol. 20 No. 4, pp. 953-968, doi: [10.11124/JBIES-21-00242](https://doi.org/10.11124/JBIES-21-00242).
- Quigley, D., Loftus, L., McGuire, A. and O'Grady, K. (2020), "An optimal environment for placement learning: listening to the voices of speech and language therapy students", *International Journal*

- of *Language and Communication Disorders*, Vol. 55 No. 4, pp. 506-519, doi: [10.1111/1460-6984.12533](https://doi.org/10.1111/1460-6984.12533).
- Regehr, G., Eva, K., Ginsberg, S., Halwani, Y. and Sidhu, R. (2011), *13 Assessment in Postgraduate Medical Education: Trends and Issues in Assessment in the Workplace*, The Association of Faculties of Medicine of Canada (AFMC).
- Rubenson, A., Ng, L. and Gucciardi, D.F. (2020), "The Assessment of Physiotherapy Practice tool provides informative assessments of clinical and professional dimensions of students performance in undergraduate placements: a longitudinal validity and reliability study", *Journal of Physiotherapy*, Vol. 66 No. 2, pp. 113-119, doi: [10.1016/j.jphys.2020.03.009](https://doi.org/10.1016/j.jphys.2020.03.009).
- Seldomridge, L.A. and Walsh, C.W. (2018), "Waging the war on clinical grade inflation: the ongoing quest", *Nurse Education*, Vol. 43 No. 4, pp. 178-182, doi: [10.1097/NNE.0000000000000473](https://doi.org/10.1097/NNE.0000000000000473).
- Sirianni, G., Glover Takahashi, S. and Myers, J. (2020), "Taking stock of what is known about faculty development in competency-based assessment medical education: a scoping review paper", *Medical Teacher*, Vol. 42 No. 8, pp. 909-915, doi: [10.1080/0142159X.2020.1763285](https://doi.org/10.1080/0142159X.2020.1763285).
- Steinert, Y., Mann, K., Anderson, B., Barnett, B.M., Centeno, A., Naismith, L., Prideaux, D., Spencer, J., Tullo, E., Viggiano, T., Ward, H. and Dolmans, D. (2016), "A systematic review of faculty development initiatives designed to enhance teaching effectiveness: a 10 year update: BEME Guide", *Medical Teacher*, Vol. 38 No. 8, pp. 769-786, doi: [10.1080/0142159X.2016.1181851](https://doi.org/10.1080/0142159X.2016.1181851).
- Swanberg, M., Woodson-Smith, S., Pangaro, L., Torre, D. and Maggio, L. (2022), "Factors and interactions influencing direct observations: a literature review guided by activity theory", *Teaching and Learning in Medicine*, Vol. 34 No. 2, pp. 155-166, doi: [10.1080/10401334.2021.1931871](https://doi.org/10.1080/10401334.2021.1931871).
- Tassoni, D., Kent, F., Simpson, J. and Farlie, M.K. (2023), "Supporting health professional educators in the workplace: a scoping review", *Medical Teacher*, Vol. 45 No. 1, pp. 49-57, doi: [10.1080/0142159X.2022.2102467](https://doi.org/10.1080/0142159X.2022.2102467).
- Trebe, F., Mischo-Kelling, M., Gasser, E.M. and Pulcini, S. (2015), "Assessment experiences in the workplace: a comparative study between clinical educators' and their students' perceptions", *Assessment and Evaluation in Higher Education*, Vol. 40 No. 7, pp. 1002-1016, doi: [10.1080/02602938.2014.960363](https://doi.org/10.1080/02602938.2014.960363).
- Vendrely, A. and Carter, R. (2004), "The influence of training on the rating of physical therapy student performance in the clinical setting", *Journal Of Allied Health*, Vol. 33 No. 1, pp. 62-69.
- Vergis, A., Leung, C. and Robertson, R. (2020), "Rater training in medical education: a scoping review", *Cureus*, Vol. 12 No.11, e11363, doi: [10.7759/cureus.11363](https://doi.org/10.7759/cureus.11363).
- Walsh, E., Foley, T., Sinnott, C., Boyle, S. and Smithson, W.H. (2017), "Developing and piloting a resource for training assessors in use of the Mini-CEX (minor clinical evaluation exercise)", *Education for Primary Care*, Vol. 28 No. 4, pp. 243-245, doi: [10.1080/14739879.2017.1280694](https://doi.org/10.1080/14739879.2017.1280694).
- Woehr, D.J. and Huffcut, A.I. (1994), "Rater training for performance appraisal: a quantitative review", *Journal of Occupational and Organizational Psychology*, Vol. 67 No. 3, pp. 189-205, doi: [10.1111/j.2044-8325.1994.tb00562.x](https://doi.org/10.1111/j.2044-8325.1994.tb00562.x).
- Wu, X.V., Enskar, K., Pua, L.H., Heng, D.N.G. and Wang, W. (2017), "Clinical nurse leaders' and academics' perspective in clinical assessment in final-year nursing students: a qualitative study", *Nursing and Health Sciences*, Vol. 19 No. 3, pp. 287-293, doi: [10.1111/nhs.12342](https://doi.org/10.1111/nhs.12342).
- Yeates, P., O'Neill, P., Mann, K. and Eva, K. (2013), "Seeing the same thing differently: mechanisms that contribute to assessor differences in directly-observed performance assessments", *Advances in Health Sciences Education: Theory and Practice*, Vol. 18 No. 3, pp. 325-341, doi: [10.1007/s10459-012-9372-1](https://doi.org/10.1007/s10459-012-9372-1).

Further reading

- Council of Deans of Health (2024), "AHP educator career framework", available at: <https://www.councilofdeans.org.uk/ahp-framework/> (accessed 28 May 2026).

Hills, C., McMahon, S., Quigley, D. and Bennett, A. (2021), *The National Health and Social Care Professions Quality Framework for Sustainable Practice Education*, HSE, National Health and Social Care Professions Office (NHSCPO), Galway.

National Health Service England (2024), "Educator workforce programme", available at: <https://www.england.nhs.uk/publication/nhs-educator-workforce-programme/> (accessed 28 May 2026).

National Health Service England (2026), *Nursing and Midwifery Education Framework*, NHS England, London, available at: <https://www.england.nhs.uk/publication/nursing-and-midwifery-educator-framework/> (accessed 28 May 2026).

Victorian Health Education Leaders Network (2024), *Healthcare Educator Capacity Framework*, Victorian Government, Australia, available at: <http://https://vccmhw.vic.gov.au/health-education-capability-framework-vheln-oct-2024> (accessed 28 May 2026).

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