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Workplace-based learning for undergraduate and pre-registration healthcare professionals

A systematic map of the UK research literature 2003-2013

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Introduction

Workplace-based learning (WBL) is a vital component of the training and education of healthcare professionals. Learning in the workplace enables undergraduate and pre-registration students to learn knowledge, skills and aptitudes required in their professional practise and thereby develop their professional disciplinary identity. In the UK, workplace-based learning for healthcare students takes place mainly within the National Health Service (NHS). To ensure that students are adequately supported in their workplace-based learning, many regulatory bodies have produced guidance to set out the standards for learning in practice based settings, such as: 'Tomorrow's Doctors' for the medical profession, 'Standards for pre-registration nursing education' for the nursing and midwifery profession and 'Standards of Education and Training' for allied health professions. Delivering 'effective and high quality education and training' is a policy priority in the UK (Department of Health 2013). All Governments of the UK have developed specialised bodies or workplace strategies to lead and deliver learning and development priorities for a modern health service.

Research evidence has a central role to play in informing our understanding of the characteristics of excellence in workplace-based learning. Yet, there is no systematic understanding of the nature of the body of research on workplace learning for healthcare professional students. The research on workplace-based learning in healthcare education is disparate, inchoate, and spread across a range of professions and disciplines. There is a need to bring together the research in this field and identify the gaps in the literature.

This report starts this journey by providing a timely and unique description of the current state of UK research in the field of workplace-based learning for undergraduate/pre-registration healthcare professionals.

Research question

> *What are the characteristics of the empirical research on workplace-based learning for undergraduate and pre-registration healthcare professionals in the UK?*

Methods

This project undertook a rapid systematic map. This approach employs systematic and transparent methods to describe the research field. The map included two main stages:

(1) A focused search and screening process to identify relevant literature. Two electronic databases and a selection of websites were searched for studies. A set of inclusion/exclusion criteria were developed in collaboration with the advisory group and used to screen potentially relevant reports.

(2) Descriptive narrative mapping of a subset of the relevant studies. A coding tool was developed and applied to all UK studies. This described key elements of the research: the healthcare students participating in the study, the nature of the workplace-based learning, the study methods and the type of findings. As in other systematic maps the actual research findings of individual studies are not reported.

Findings

There were 1,660 studies of workplace-based learning for undergraduate and pre-registration students in healthcare identified and included in the Higher Education Academy (HEA) database[1]

The systematic map identified 117 empirical UK studies about workplace-based learning for undergraduate/pre-registration healthcare students.

The highest number of studies (*n* = 52) focused on the nursing profession. The second highest group of studies focused on inter-professional workplace-based learning (*n* = 18). There were relatively few studies examining students in medicine (*n* = 13), dentistry (*n* = 11) and midwifery (*n* = 10). Studies of workplace-based learning for students of the allied health professions were also limited in number (e.g. 4 physiotherapy studies).

Ninety-five per cent of the studies in the map (*n* = 111) reported views, perceptions or experiences of any aspect of the workplace-based learning experience, its organisation, presentation, content, instruction or outcome. Six studies investigated the impacts of workplace-based learning using independent quantitative outcome measures. These measured different types of student learning impacts (modifications in student's attitudes, knowledge or skill). There were no studies that measured impacts on organisational practice or patient/client outcomes using independent quantitative outcome measures.

A high proportion of the studies of workplace-based learning (82%) used qualitative data. Studies with only quantitative data were relatively few in number (*n* = 22) and represented 18% of the studies included in the systematic map. The most common methods of data collection included questionnaires and interviews.

Eighty-five studies examined a general form of workplace-based learning rather than formal interventions or programmes. Of the studies that did examine a specific form of workplace-based learning, supervision/professional mentoring (students receiving mentoring by a qualified health professional) was the most common (*n* = 27).

Discussion and conclusions

This is the first report, to our knowledge, that systematically identifies and characterises the UK literature on workplace-based learning for undergraduate and pre-registration students across multiple healthcare professions and settings.

Gaps in the research field:

- the number of studies identified is relatively few given the large scale and spread of workplace-based learning in the UK;
- there are few large-scale studies, examining workplace-based learning across multiple organisations;
- few studies examined workplace-based learning for students from the allied healthcare professions;
- very few studies examined the impact of workplace-based learning using independent quantitative outcome measures;
- none of the studies reported quantitative measurements of the impacts of workplace-based learning on health service delivery or the quality of patient care.

[1] http://eppi.ioe.ac.uk/webdatabases4/Intro.aspx?ID=8

Strategic priorities for future research:

- more research in the field of workplace-based learning for undergraduate and pre-registration healthcare professionals;
- a new stream of research that examines the impact of workplace-based learning on organisations, patients, and student practice using quantitative, independent outcome measures;
- more primary research that measures the impact of workplace-based learning on student learning using quantitative, independent outcome measures;
- in-depth systematic reviews of student or educator views of workplace-based learning in the healthcare professions;
- more research on healthcare professions other than nursing.

1. Introduction

The research on workplace-based learning (WBL) in healthcare education is disparate, inchoate, and spread across a range of professions and disciplines. There is a need to bring together the research in this field and identify the gaps in the literature. This project identified the characteristics of empirical research on workplace-based learning for UK undergraduate and pre-registration healthcare professionals.

1.1 The workplace as a site for learning

Practitioners from all health care professions must be able to integrate and apply a wide range of knowledge, skills and aptitudes in varying healthcare contexts from the moment that they complete their undergraduate or pre-registration training. Learning in workplaces is seen as a vital component in enabling healthcare students to (1) learn these capabilities for practice: 'practice has to be learned by practising' (Dornan 2012, p. 16) and, (2) develop their professional disciplinary identity (Morris and Blaney 2010). Workplace-based learning therefore constitutes an integral part of the training for healthcare professionals. Within the UK, standards and guidance for undergraduate and pre-registration education across the healthcare professions emphasise the importance of practical experience and interaction with patients (Chartered Society of Physiotherapy 2010; General Medical Council 2009; Health and Care Professions Council 2012; Nursing and Midwifery Council 2010a). Some professions require students to undertake a proportion of their training within the workplace: in pre-registration nurse education, for example, students are expected to spend half of the programme providing direct nursing care (Nursing and Midwifery Council 2010a, 2010b). Within physiotherapy, pre-registration students are required to undertake at least one-third of their training in a clinical setting (Chartered Society of Physiotherapy 2010).

The supervision of students by clinical professionals is critical to the experience and outcomes of workplace-based learning. Regulatory bodies within the UK have therefore established standards to guide teaching and learning in practice-based settings. In medicine, 'Tomorrow's Doctors' (first published in 2003 and then in 2009) sets out the standards for teaching and learning. There have also been recent developments in medical and dental professions re developing frameworks to help define training and competency requirements for clinical teachers and ensure uniformity and quality of supervision (Academy of Medical Educators 2010; Committee of Postgraduate Dental Deans and Directors 2008, 2013). The Nursing and Midwifery Council published 'Standards to support learning and assessment in practice' in 2006 (with the second edition following in 2008) which set standards for the preparation of practice for clinical teachers involved in the delivery of nursing education in higher education institutions (HEIs) and the clinical workplace setting. This report was followed by 'Standards for pre-registration nursing education' (Nursing and Midwifery Council 2010a). Within physiotherapy, the Standards of Proficiency (SOPs) have been set out by the Health Professions Council (2007). Allied health professions are guided by the Health and Care Professions Council 'Standards of Education and Training' (2012) which specifies the standards for workplace-based learning.

1.2 Public policy and workplace-based learning in the UK

In the UK, the workplace-based learning of healthcare students takes place mainly within the National Health Service (NHS). The organisation, support and delivery of this workplace-based learning is a highly complex and large-scale undertaking involving large

numbers of health care staff, students, higher education institutions and NHS Trusts. Workplace-based learning, and its organisation and delivery within these institutions, is shaped by a wide range of factors including:

- policy and practice within the NHS, and healthcare delivery more broadly, determine the type and availability of workplace-based placements available for students. Recent developments have highlighted the importance of workplace-based learning for the delivery of a modern health service. The Willis Commission (2012) responded to concerns that pre-registration nursing education was not fit for purpose and delivered recommendations that included emphasising the importance of the workplace learning environment provided by the NHS. The report of the public inquiry into the failure of care at Mid Staffordshire NHS Trust identified a failure of nursing and medical staff to adhere to the highest professional standards as a key factor in the failures of the Trust and highlighted the important role of education and training in ensuring that such failures were prevented (Francis 2013);
- changes in higher education policy and/or NHS workforce planning also influence the provision of workplace-based learning. An increase in student numbers, for example may mean that it becomes more difficult to provide a sufficient number of good quality practice placements;
- delivering 'effective and high quality education and training' in the healthcare professions is a constant policy theme in the UK (Department of Health 2013). In England, the Government established Health Education England (HEE) in 2012 to lead and deliver changes in education and training. The Education Outcomes Framework was developed to identify and measure the quality of health education programmes funded by HEE (Department of Health 2012). The Government's mandate to Health Education England identifies the need for high quality clinical and public health placements that provide trainees and students with sufficient time working with patients to gain experience in relevant and varied clinical and public health settings (Department of Health, 2013, p. 16).

In Scotland, *A Force for Improvement* (The Scottish Government 2009) provided an agenda for supporting and developing Scottish healthcare professionals. In Wales, workforce strategies are set out, and reviewed annually, by the Annual Quality Framework for NHS Wales, with an overarching framework established by a five year plan (NHS Wales 2010). In Northern Ireland, a workforce learning strategy identified learning and development priorities for a modern health service (Department of Health, Social Services and Public Safety 2009).

European policy initiatives also influence the delivery and organisation of workplace-based learning within the UK. The introduction of the European Working Time Regulations, for example, reduced the maximum number of hours that healthcare practitioners could work in a week. This may have reduced educational opportunities for healthcare students (Morrow *et al*. 2012) and made the supervisory relationships that support workplace-based learning more difficult (Morris and Blaney 2010; Dornan 2012).

1.3 Research evidence and workplace-based learning

The knowledge and skills required to become an excellent healthcare practitioner are constantly evolving, as are the workplace contexts in which the learning takes place. The challenge for clinical education policymakers and practitioners alongside their health service colleagues is, therefore, how to organise, facilitate, support and structure workplace-based learning to ensure that healthcare students, qualified practitioners, patients and users of healthcare services all gain optimal benefit. It is therefore important

to continuously address questions about the characteristics of excellence in workplace-based learning in these complex circumstances.

Research evidence has a central role to play in informing our understanding of these questions. In the past few decades, the nature of medical and healthcare education research has changed significantly. The body of literature has grown and research in this field has become a domain of systematic study in its own right (Eva 2009; Rotgans 2012). There has been a growing movement within the field to improve the rigour and relevance of the research (Eva 2009). Typically, the field of medical and healthcare education research has been characterised by small scale, uni-site, observational studies (Dauphinee and Wood-Dauphinee 2004; Eva 2009; Mulholland *et al*. 2004; Rotgans 2012). In recent years, there has been recognition that a wider range of study designs, theoretical perspectives and methodological practices can play a valuable role in evidence-informed education (Eva 2013).

There are many ways in which we can think about or conceptualise the learning of healthcare professional students that takes place in the clinical environment. There are different ways of thinking about 'what the learning is' or what is supposed to be learnt, what the learning process is or how learning happens, what the learning environment is, who is 'learning' and who is 'teaching'. We could, for example, think about 'learning *for* work', 'learning *at* work' or 'learning from work' (Seagraves and Boyd 1996). We could draw on different theoretical perspectives, Industrial Relations, Sociology and/or 'Social Learning' theory for example (Evans *et al*. 2006). New understandings from the learning sciences suggest traditional skills focussed apprenticeship models of workplace-based learning can be enriched by paying more attention to affective elements of learning and the wide variety of types of knowledge used by practitioners (Eraut 2011). For example, identity formation is increasingly seen as a key outcome of workplace learning (Monrouxe 2010). Similarly, it has been argued that the traditional emphasis on the 'master' to 'apprentice' transmission can be understood better by recognising that learners are participating as students and members in of social groups which function to create and deliver practice in healthcare settings (Morris 2012).

The different ways of conceptualising learners, learning and the workplace-based learning environment combined with the range of methodological tools available provide a rich toolkit for the investigation of the phenomena of interest. Thus, research in this area has different but related foci of interest or concern. Organisational and cultural aspects of the learning environment, the preparation and support of clinical educators/teachers, inter-professional learning, formative and summative assessment; are all examples of potential areas of interest for practitioners and researchers in this field.

Given the broad scope of the field of enquiry, the multiplicity of foci, contexts, methods, and theoretical approaches an overview of the field that can encompass this complexity is required. Systematic review approaches provide a useful tool for gaining an overview of the current understanding of a phenomenon provided by research. The growing interest in systematic reviews in clinical education is evident in, for example, the development of the Best Evidence Medical Education (BEME) collaboration in 1999 to provide an international organisation to support the use of rigorous evidence in medical education (Thistlethwaite and Hammick 2010). While there have been reviews of particular aspects of workplaced-based learning (e.g. preceptorship in nursing, Billay and Myrick 2008) or inter-professional education (Hammick *et al*. 2007) there do not appear to be any systematic reviews that focus on workplace-based learning for healthcare students and thus we do not have a complete or evidence-based understanding of the literature and its characteristics. This report is the outcome of a project which began the journey to gain/develop a greater understanding of the characteristics of excellence of workplace-based learning for

undergraduate or pre-registration healthcare students through the lenses provided by research. The first part of the journey reported here is to 'map' – that is, identify and describe – the existing UK research literature on this topic as a basis for taking more informed decisions about next steps on this journey of understanding.

1.4 Defining the field for review

The details of the methods used in this review are discussed in chapter two but in the light of the discussion above it is important to explain how we attempted to focus the field of investigation for this systematic map. In seeking to be inclusive, the review did not specify a particular conceptual or theoretical perspective on workplace-based learning beyond defining workplace-based learning as an interaction between a qualified health care professional or patient and a student healthcare professional that takes place in the clinical workplace rather than in a classroom. It may be argued that there are other learning interactions that take place in the clinical learning environment but these boundaries were adopted in this review. A broad approach was taken to the definition of what constitutes healthcare professionals and the clinical workplace.

The review seeks to be transparent about the decisions that were made in the review process rather than to suggest that one way is any better than another. Other decisions about scope and conceptualization may produce a different map of the literature, although they would be likely to have considerable overlap to the studies identified here.

Working definitions of the key concepts addressed in this review are the following:

Population: undergraduate and pre-registration students in healthcare. '*Undergraduate and pre-registration'* refers to initial training in the health sciences. In UK medical education, this includes all years of higher education up until graduation (taking place prior to foundation training). For nursing and midwifery, this includes training for the pre-registration diploma or degree. In US[2] medical education, undergraduate training includes all studies undertaken for graduate entry courses at medical school. Undergraduate nursing education in the US will include training undertaken for a diploma, associate degree, or BSc in nursing.

'Healthcare' refers to medical, nursing and other clinically-based health professions, including allied health profession roles (arts therapists, chiropodists/podiatrists, dieticians, occupational therapists, orthoptists, prosthetists/orthotists, paramedics, physiotherapists, radiographers, speech and language therapists, dentistry, pharmacy)

Work place Setting: clinical and social care settings including hospitals, hospices, community settings and family medicine.

Workplace-based learning: interaction between a qualified healthcare professional (and possibly patient) and an undergraduate and pre-registration student in the health professions for the purpose of learning. The type of intervention is described in a number of ways in the literature including practice education, placement learning, clinical placement or work based learning (Mulholland *et al*. 2004).

[2] The database of studies produced as part of this project includes international studies which were not mapped in this report.

1.5 Review question

This project addresses the following research question:

> *What are the characteristics of the empirical research on workplace-based learning for undergraduate and pre-registration healthcare professionals?*

2. Methods

2.1 Approach

This project undertook a rapid systematic map. This approach employs systematic and transparent methods to describe the research field. The term 'scoping review' is also sometimes used to describe this approach. Systematic maps can serve many purposes including describing the nature of the research, and informing the methods of subsequent research syntheses (Gough *et al*. 2012).

This systematic map included two stages: (1) a focused search and screening process to identify relevant literature, (II) descriptive narrative mapping of a subset of the relevant studies. (Thomas *et al*. 2013). The value of such an approach is that it provides a consistent description of a selected body of literature, using transparent and systematic methods.

2.2 User involvement

The project was guided by an expert advisory group. The group included representatives from the Higher Education Academy, Association for the Study of Medical Education, and National Association of Educators in Practice (members of the advisory group are listed in Appendix 6.1)

The advisory group offered guidance throughout the duration of the review. This input was provided via ongoing email/telephone contact and meetings at key points in the project:

1. Launch of the project (November 2012),
2. Following submission of the draft protocol (February 2013),
3. Reporting of preliminary findings (May 2013),
4. Following submission of draft report (July 2013).

The advisory group guided the overall theoretical and substantive framing of the project. Key methodological inputs included:

- establishing the theoretical framework and defining key concepts (such as the meaning of work-place based learning and appropriate settings for this);
- reviewing the search strategy, contributing key search terms for the electronic database searches and identifying relevant websites;
- establishing the scope of the map and contributing to the screening criteria (such as defining particular studies that were out of scope e.g. research on simulation learning);
- prioritising studies and reviewing the in-depth coding tool.

The advisory group provided feedback and comments on the draft protocol, coding tools and draft reports.

2.3 Identification of potential studies: search strategy

The healthcare education literature is distributed widely, crossing professional and academic disciplinary boundaries. There are no search sources dedicated to clinical education and no indexed bibliographic database specifically for this field. It is therefore necessary to use general healthcare or education databases, together with handsearching

(Haig and Dozier 2003). These two elements formed the basis of the search strategy. In contrast to a comprehensive systematic review a number of strategies were employed to undertake the search in a rapid time frame: primarily drawing on electronic database searches, only using a limited number of databases, and retrieving only papers/reports that were available in electronic form (Thomas *et al*. 2013).

Bibliographic databases
Two databases were searched because there is no comprehensive coverage of the field in any single database and subject headings used by databases often fail to capture the field of healthcare education (Haig and Dozier, 2003). For this reason, the search strategy used CINAHL (the largest database for nursing and allied health professions) and Medline (covers the biomedical and health literature).

Complex search strings for the bibliographic databases were developed by drawing on methods used in existing reviews in this field (Dornan *et al*. 2006) and expertise from the advisory group. The search strings combined MeSH terms/subject headings and simple free text terms (See Appendix 6.3). Once the searches were completed, all of the references were exported into EPPI-Reviewer 4 (the EPPI-Centre's comprehensive online software tool for research synthesis).

Handsearching
A number of websites were examined to identify relevant primary research and systematic reviews (see Appendix 6.4 for further details):

- Cochrane Effective Practice and Organisation Care group (EPOC);
- BEME Systematic Reviews;
- Centre for Reviews and Dissemination (CRD);
- The Association for Medical Education in Europe (AMEE);
- The Association for the Study of Medical Education (ASME);
- National Association of Educators in Practice (NAEP);
- Association for Dental Education in Europe (ADEE);
- Royal College of Nursing (RCN);
- HEA Subject Centre Archives, Health Sciences and Practice;
- Health and Social Care Journal.

Experts were contacted via email (see acknowledgements).

2.4 Identification of potential studies: selecting studies for inclusion

A set of inclusion/exclusion criteria were developed in collaboration with the advisory group (see Appendix 6.2). These criteria were based on the conceptual definitions set out in section 1.3. Strategies to streamline the screening process (such as excluding research that was not reported in English or items that did not have a readily available electronic abstract) (see Thomas *et al*. 2013) were used. It was also necessary to set a limit for the publication date. Given the argument that the contextual features of the workplace are important factors in shaping the learning experience we decided to focus on recent and contemporary research that had been carried out after 2003 when the outcomes that new medical graduates must be able to demonstrate and the associated standards for teaching,

learning and assessment were published by the UK General Medical Council in 'Tomorrow's Doctor's' (and subsequently guidance from other healthcare professions). Major reforms to postgraduate medical foundation and specialist training were introduced in 2004-5 which it is felt may also have had major implications for the workplace learning environment for undergraduate and pre-registration health care students.

The process of screening studies involved applying a set of inclusion/exclusion criteria to the information available about the research item (typically this meant titles and abstracts). The screening for this project was undertaken in two ways:

(1) For the hand-searching, the title and abstracts of all potentially relevant items were reviewed during the searching process. All items deemed to be relevant were then manually entered into EPPI-Reviewer.
(2) For the database searching, the title and abstracts of all items identified in the search were manually screened against the inclusion criteria on EPPI-Reviewer.

On completion of the screening process, it became apparent that it would not be possible to undertake a descriptive mapping of all included studies because we identified more studies than were anticipated. A subset of studies was therefore identified for further analysis: studies carried out in the UK. Two strategies were used to identify all UK studies: (1) UK-based research was marked in the screening process, (2) all included studies with any of the following terms reported in the abstract were identified and screened: 'Britain', 'GB', 'England', 'Wales', 'Scotland', 'Northern Ireland', 'UK', 'United Kingdom'.

References for all of the studies identified that met the initial inclusion criteria can be found on the searchable database produced as part of the project. The database can be found at
http://eppi.ioe.ac.uk/webdatabases4/Intro.aspx?ID=8

2.5 Describing included studies

A coding tool was developed and applied to all UK studies (see Appendix 6.5). This described key elements of the research: the healthcare students participating in the study, the nature of the workplace-based learning, the study methods and the type of findings. As in other systematic maps the actual research findings of individual studies are not reported (Thomas *et al*. 2013).

The coding tool drew loosely on the descriptors of evidence developed by Kirkpatrick (Kirkpatrick and Kirkpatrick 2009) to evaluate the impact of educational interventions. These descriptors were used to provide a framework for describing the types of outcomes identified in the map. The Kirkpatrick model presumes an evaluative framework and assumes a hierarchical set of values about the importance of certain kinds of evidence. Such assumptions have been criticised and their applicability to the education and training of healthcare professionals questioned (Yardley and Dornan 2012). None of the assumptions underpinning the notion of hierarchy or the evaluative framework was relevant or necessary for the purpose of this systematic map. Instead, the coding tool used a modified version of the Kirkpatrick approach to create a non-hierarchical, more nuanced set of descriptor codes that facilitate consideration of the gaps in the existing research evidence in this field.

Workplace-based learning was categorised and defined in the following ways: a formal supervisory or mentoring relationship investigated by the study (between the student and a qualified health professional) was defined as 'supervision/professional mentoring'. 'Peer mentoring' referred to mentoring programmes where senior students acted as role models

for the undergraduate and pre-registration students. ‘Clerkships’ referred to programmes that required students to rotate through different specialities and ‘international placement’ included workplace-based learning undertaken in a country that differed from their UK home educational institution. These types of workplace-based learning were understood as formal programmes or interventions. When the workplace-based learning was not described by the authors in any of the terms above and a formal programme of learning in the workplace was not described, this was defined as ‘general/no formal type’.

2.6 Quality assurance process

Quality assurance procedures were undertaken at each stage of the review:

- protocol development: the initial draft was subject to internal review prior to circulation to the advisory group. The advisory group offered external review and guidance, verbally and in writing;
- bibliographic database searching: the development of a search string is a necessarily iterative process with pilot searches and pretesting. A combination of MeSH and free text terms were tested and refined in order to achieve a search that balanced sensitivity and specificity;
- screening – the inclusion/exclusion criteria were piloted by all members of the team in several rounds of testing. Each reviewer applied the criteria to a set of potentially relevant studies. The decisions made were then compared and disagreements discussed. Further guidance was developed and the inclusion/exclusion criteria refined. The items were then screened by one reviewer, with further issues discussed within the team as and when they arise;
- in-depth descriptive coding: a set of included studies were coded by three reviewers independently. The coding decisions were compared and discussed. This procedure was used to refine the coding tool and process. A single reviewer then continued to code the remaining included studies.

3. Findings

3.1 Studies included from searching and screening

A total of 8801 items were identified from the electronic databases and hand searching. The process of screening on title and abstract excluded 68% of these items (*n* = 6016). Half of these items were excluded because the records were not empirical research. The other reasons for exclusion are set out in figure one. Based on title and abstract screening, 1637 primary studies and 54 systematic reviews were included. Ten per cent (*n* = 160) of these items were identified as UK-based studies. These items were then subject to full text screening and 26% (*n* = 42) of the UK-based studies were excluded as they did not meet the initial inclusion criteria. Reasons for these exclusions are also set out in figure one. The final mapping analysis was undertaken with 117 UK primary studies.

3.2 Systematic map of UK research

This systematic map identified 117 empirical UK studies about workplace-based learning for undergraduate and pre-registration healthcare students. This body of literature is described below and a summary of each study based on the coding framework is provided in Appendix 6.11. More focused reporting can be found for inter-professional studies and those healthcare professions with over ten studies: Nursing, Midwifery, Medicine, and Dentistry in the appendices 6.6 to 6.10.

The 117 studies include nine 'linked studies' (Levett-Jones *et al*. 2008, 2009; Lynch *et al*. 2010a, 2010b, 2011; Ward, 2012, 2013; Wareing, 2010a, 2010b). These are multiple reports that examine the same workplace-based learning setting and subjects but report different aspects of the findings. Two studies may be 'linked' because, for example, one study reported student views of the experience while the other reported educator perspectives.

3.2.1 Which healthcare professions were examined?

The studies focused on workplace-based learning across the healthcare professions. Table one shows the number of studies by professional groups. The number for each profession represents the number of studies in which that profession was the sole focus of the study. Thus there may be other studies where a particular profession is included as one of an inter-professional group of study subjects. The highest number of studies (*n* = 52) focused on nursing. The second highest group were inter-professional studies (those that involved students from more than one health profession or other profession) (*n* = 18). The 'other' category refers to studies of trainee healthcare assistant practitioners. Few studies were identified for students of pharmacy and the allied health professions.

Figure 1: Flow of items through the mapping process

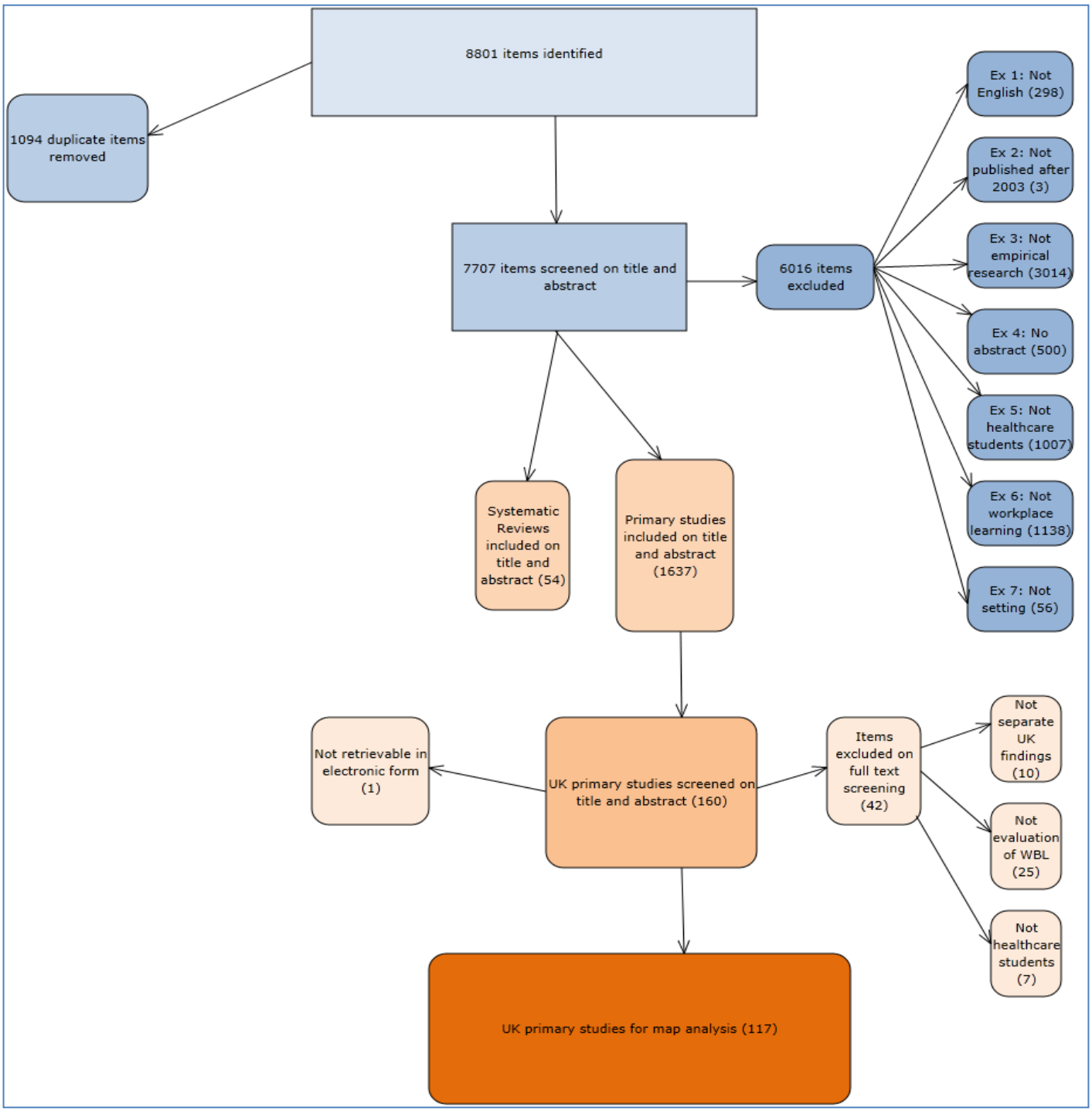

Table 3.1: Number of studies examining each healthcare profession

Healthcare professions	Number of studies
Nursing	52
Midwifery	10
Medicine	13
Art therapists	0
Chiropodists/podiatrists	0
Dentistry	11
Dieticians	2
Occupational therapists	1
Orthoptists	0
Paramedics	1
Pharmacy	0
Physiotherapists	4
Prosthetists/orthotists	0
Radiographers	1
Speech and language therapists	0
Other	4
Inter-professional	18

In seventeen studies the study participants were non-students (the 'not applicable' category in Table 3.2). Of the remaining 100 studies, 89 reported the number of students used in their sample and 11 did not.

Table 3.2: Number of studies reporting the number of student participants (inc. no of students)

Not applicable	**17**
Reported	89
Not reported	11
Total	117

Healthcare professions students were the only participants in 55 of the studies ('not applicable' category in Table 3.3). Fifty-four of the studies included other kinds of participants in addition to healthcare professions students such as students from non-healthcare professions (such as social work), academic tutors, mentors, individuals who have left the healthcare professions, service users and other stakeholders ('reported' category in Table 3.2).

Table 3.3: Number of studies reporting the number of participants other than healthcare professional students

Not applicable	**55**
Reported	54
Not reported	8
Total	117

3.2.2 What does the research tell us about?

A high proportion of the empirical research, over 95%, reported perceptions about workplace-based learning (*n* = 113). Studies that examined 'perceptions about workplace-based learning' are defined as those that examined study participant's views, perceptions or experiences of any aspect of the workplace-based learning experience, its organisation, presentation, content, instruction or outcome. 'Perception' studies included the views or experiences of students, educators or patients (see Table 4). Ninety-three studies examined student perceptions, 52 reported educator perceptions and four sought patient perceptions (Anderson *et al*. 2010; Craddock 2011; Finnerty *et al*. 2007; Lennon *et al*. 2004). These studies about patient perceptions were undertaken in midwifery, dentistry and inter-professional contexts.

Table 3.4: Number of studies examining perceptions

Whose perceptions?	Number of studies
Student	93
Educator	52
Patient	4

Five per cent of the included studies reported impacts of workplace-based learning (*n* = 6) using independent quantitative outcome measures, that is, modifications/changes attributable to workplace-based learning on student learning outcomes. These studies used data collection instruments that measured quantitative impacts attributable to workplace-based learning which were independent of the respondents own perception of their performance. Two examined both perceptions of and impacts of workplace-based learning (McFayden *et al*. 2010; Smith *et al*. 2006) and four reports focused on the impacts of workplace-based learning (Aldridge *et al*. 2012; Mohammed *et al*. 2006; Pender and de Looy 2004; Smith *et al*. 2009).

Of the six papers, two focused on medical students, one in dermatology (Aldridge Maxwell and Rees 2012) and other in paediatrics (Mohammed *et al*. 2006). The paediatrics study was a randomised controlled trial of student directed versus structured workplace learning placements in paediatric outpatients. Two studies were in dentistry (Smith *et al*. 2006; Smith *et al*. 2009), reporting a randomised trial of community dental placements measuring development of clinical skills and exam performance (Smith *et al*. 2006; Smith, Lennon and Robinson 2009). One study measured the key skill development of student dieticians during placements (Pender and DeLooy 2004). One paper measured the change attitudes and perceptions of inter-professional ideals in nursing, occupational therapy, physiotherapy, podiatry, prosthetics, orthotics, and radiography students before and after an inter-professional intervention using a control group before and after design (MacFadyen *et al*. 2010).

Different types of student learning impacts were measured by these studies: two examined the impact of workplace-based learning on student attitudes (MacFadyen *et al*. 2010; Smith *et al*. 2006), three studies measured changes in student knowledge of procedures, principles or concepts (Aldridge Maxwell and Rees 2012; Mohammed *et al*. 2006; Smith, Lennon and Robinson 2009), and three studies examined changes in student skills as a result of workplace-based learning (Pender and DeLooy 2004; Smith *et al*. 2006; Smith, Lennon and Robinson 2009). None of the studies measured changes in student behaviour. There were no studies that examined changes in organisational practice or patient/client outcomes.

3.2.3 What research approaches were used?

The research approach taken in the studies was mapped on a number of dimensions (data-collection methods, timing of data collection, type of data used, data analysis methods and whether a comparison group was used). This enabled us to generate a broad understanding of the research approaches used in the field. This information has not, however, been used to grade the quality of the study methods. Details about the research design and methods used in each included study are summarised in the table in Appendix 6.11.

A high proportion of the studies of workplace-based learning (82%) used qualitative data. Fifty-one studies only used qualitative data and 44 reported the use of both qualitative and quantitative data. Studies with only quantitative data were relatively few in number (*n* = 22) and represented 18% of the studies included in the systematic map. Table 3.5 sets out the types of data used in studies for the different professions. Qualitative data were used in the majority of the studies across all professions with the exception of dentistry. A high proportion of the studies of inter-professional workplace-based learning included both qualitative and quantitative data.

Table 3.5: Types of data, by profession

Profession	Both qualitative and quantitative	Only quantitative	Only qualitative
Nursing	17	8	27
Midwifery	4	0	6
Medicine	5	4	4
Arts therapists	0	0	0
Chiropodists/podiatrists	0	0	0
Dentistry	3	7	1
Dieticians	1	1	0
Occupational therapists	0	0	1
Orthoptists	0	0	0
Paramedics	0	0	1
Pharmacy	0	0	0
Physiotherapists	1	1	2
Prosthetists/orthotists	0	0	0
Radiographers	1	0	0
Speech and language therapists	0	0	0
Other	0	0	4
Inter-professional	12	1	5

The most common methods of data collection included questionnaires and interviews. Sixty-eight studies used questionnaires, either to collect data from students (*n* = 57) and/or mentors (*n* = 23). Seventy-two studies used interviews. This set of studies included one-to-one interviews (*n* = 47) and focus group interviews (*n* = 42) (see Table 3.6). Only five studies from the map did not use any type of questionnaire or interview to collect data. These studies used self-completed reports (Baglin *et al*. 2009; Robson and Kitchen

2007), clinical tests (Mohammed *et al*. 2006; Smith *et al*. 2009) and observation (Pender and de Looy 2004).

Table 3.6: Research methods used to collect data (not mutually exclusive)

Data collection methods	Number of studies
Questionnaire/survey instrument completed by student	57
Questionnaire/survey instrument completed by supervisor/mentor	23
Self-completion report or diary	9
One-to-one interview (face-to-face, telephone)	47
Focus group interview	42
Observation	8
Clinical test	2
Patient outcomes data	0

There were distinct patterns in the data collection methods used by different disciplines (see Table 3.7). The nursing and midwifery literature used a high proportion of interview and questionnaires methods whereas medicine and dentistry mainly used questionnaires. Clinical test data was only collected by dentistry and medicine.

The majority of studies (*n* = 78) collected data after workplace-based learning had taken place (see Table 3.8). Nineteen studies undertook the data collection while the research participants were engaged with workplace-based learning and 16 studies used data collected both during and after workplace-based learning. Fifteen studies used a pre/post approach to data collection, collected data before and then after the workplace-based learning.

Most of the studies collected data from one group of research participants (*n* = 105). Twelve studies used a control group (see Table 3.9). Seven of these studies compared a group of students undertaking a workplace-based learning intervention with a set of students receiving the standard programme of learning (Brand *et al*. 2011; Child and Langford 2011; Maclusky and Durham 2009; McFadyen *et al*. 2010; Roxburgh *et al*. 2012; Smith *et al*. 2006; Smith *et al*. 2009). Five studies compared two (or more groups) receiving different forms of workplace-based learning (Deaville and Grant 2011; Gidman *et al*. 2011; Mohammed *et al*. 2006; Levett-Jones *et al*. 2008; Rodd *et al*. 2010).

Table 3.7: Research methods used to collect data, by profession

Profession	Student questionnaire	Educator questionnaire	Self-completion report	One-to-one interview	Focus group interview	Observation	Clinical test	Patient outcomes data	Not reported
Nursing	22	8	5	23	23	4	0	0	0
Midwifery	4	2	2	6	6	0	0	0	0
Medicine	6	4	0	1	3	1	1	0	0
Arts therapists	0	0	0	0	0	0	0	0	0
Chiropodists/ podiatrists	0	0	0	0	0	0	0	0	0
Dentistry	8	4	1	1	0	0	1	0	0
Dieticians	1	0	0	0	0	1	0	0	0
Occupational therapists	0	0	0	1	1	0	0	0	0
Orthoptists	0	0	0	0	0	0	0	0	0
Paramedics	1	0	0	1	0	0	0	0	0
Pharmacy	0	0	0	0	0	0	0	0	0
Physiotherapist	1	1	1	1	0	0	0	0	0
Prosthetists/ orthotists	0	0	0	0	0	0	0	0	0
Radiographers	0	1	0	0	0	0	0	0	0
Speech and language therapists	0	0	0	0	0	0	0	0	0
Other	0	0	0	4	1	0	0	0	0
Inter-professional	14	3	0	9	8	2	0	0	0

Table 3.8: Timing of data collection (not mutually exclusive)

Timing in relation to workplace-based learning	Number of studies
During	19
Pre and post	15
During and post	16
Post	78

Table 3.9: Study design – control/comparison conditions

The comparison group	Number of studies
One group only	105
Treatment as usual	7
Alternative workplace-based learning	5

Studies using independent quantitative measures of impact (n = 6)

Most of these studies undertook the evaluation before and after workplace-based learning had taken place (Aldridge *et al*. 2012; Mohammed *et al*. 2006; McFayden *et al*. 2010; Smith *et al*. 2006; Smith *et al*. 2009). One of the studies reported data collected during the workplace-based learning (Pender and de Looy 2004). Four of these studies used a control group, one receiving an alternative form of workplace-based learning (Mohammed *et al*. 2006) and the other three control groups followed treatment as normal (McFayden *et al*. 2010; Smith *et al*. 2006; Smith *et al*. 2009). Two of the studies only examined the outcomes of one group (Aldridge *et al*. 2012; Pender and de Looy 2004).

The independent quantitative measures of impact used included scales in student questionnaires (Aldridge *et al*. 2012; McFayden *et al*. 2010; Smith *et al*. 2006), quantitative measurement observations (Aldridge *et al*. 2012; Pender and de Looy 2004), and clinical test data (Mohammed *et al*. 2006; Smith *et al*. 2009).

3.2.4 What type of workplace-based learning was examined?
The studies examined different types of workplace-based learning. These were categorised according to the authors' description.

Eighty-five studies examined general workplace-based learning rather than formal interventions. Of the studies that did examine a specific form of workplace-based learning, supervision/professional mentoring (students receiving mentoring by a qualified health professional) was the most common (*n* = 27) (see Table 10). Four studies examined peer mentoring (programmes where senior students act as a role model and resource to other students) (Christiansen and Bell 2010; Glasper *et al*. 2006; Martin *et al*. 2004; Taylor 2007). Three studies focused on clerkships (a form of professional mentoring that is defined by students' rotation through different specialities in different departments) (Jamjoom *et al*. 2009; Lucas and Pearson 2005; Matheson *et al*. 2010). One study examined UK student experiences of workplace-based learning in a different country (Morgan 2012).

Table 3.10: Type of workplace-based learning (not mutually exclusive)

Type	Number of studies
General/no formal type	85
Clerkship	3
Peer mentoring	4
International placement	1
Supervision/professional mentoring	27

Nine of the studies reported a formal name for the intervention under study. These included: 'The Leicester Model of Inter-professional Education' (Anderson and Lennox 2009; Anderson and Thorpe 2010; Anderson and Smith 2010), 'The Enhance Project' (Andrew *et al*. 2009), the 'Practice Educator Facilitator' (PEF) (Carlisle *et al*. 2009), 'Primary Care Pathway Programme' (Chowthi-Williams 2010), 'Creating Interprofessional Learning in Children's Centres' (McCombe *et al*. 2008), 'Fife Interprofessional Clinical Skills Model for Education' (FICSME) (O'Carroll *et al*. 2012), and Hub and Spoke models (Roxburgh *et al*. 2012).

Forty-three studies reported the duration and frequency of the workplace-based learning, with varying levels of detail provided (see Table 3.11). The duration and frequency varied widely and tended to be unique to each study. One study examined, for example, ten half-day clinical sessions over a two-week attachment (Aldridge *et al*. 2012) and another study examined students who undertook workplace-based learning for one day a week over the course of a year (Lynch *et al*. 2010).

Table 3.11: Study reporting of duration and frequency of workplace-based learning

Duration and frequency reported?	Number of studies
Reported	75
Not reported	43

Almost half of the studies examined workplace-based learning within one institution/organisation (*n* = 57) and a quarter examined workplace-based learning delivered at a number of sites in one region (*n* = 31). A low proportion of the studies examined workplace-based learning that was carried out at the national level (*n* = 14) (see Table 3.12).

Table 3.12: Scale of workplace-based learning examined by the studies

Scale	Number of studies
One institution/organisation	57
Regional	31
National	14
Not reported	15

The studies examined workplace-based learning that had taken place across the UK and in various healthcare settings (see Table 3.13). A high proportion of the studies (40%) focused on workplace-based learning in England (*n* = 47). 32% of the studies examined workplace-based learning in the UK (*n* = 38) which means that the precise location of the workplace-based learning was not reported or these took place nationwide. Fewer studies examined workplace-based learning in Wales (*n* = 12), Scotland (*n* = 10) and Northern Ireland (*n* = 2).

Table 3.13: Country of the workplace-based learning examined by the studies

Country	Number of studies
UK	38
England	47
Wales	12
Scotland	10
Northern Ireland	2
Not reported	13

Seventy-two studies reported the setting of the workplace-based learning (see Table 3.14). Hospital or community settings were the most common sites for the workplace-based learning with 39 and 32 studies respectively. Ambulatory/outpatients and dental settings were examined by 11 studies each and general practice by ten. Aged care and mental health settings were both examined by nine studies.

Table 3.14: Setting of workplace-based learning (not mutually exclusive)

Setting of workplace-based learning	Number of studies
Hospitals/acute care	39
Ambulatory/outpatients	11
Aged care	9
Community setting	32
General practice/family medicine	10
Professional practice	0
Dental and oral health	11
Mental health	9
Not reported	43

There were different patterns in the types of settings examined by research of different professions. In nursing and midwifery, hospital and community settings were examined by most studies (see Table 3.15). In medicine, the most common settings were hospitals and general practice.

Table 3.15: Setting of workplace-based learning, by profession (not mutually exclusive)

	Nursing	Midwifery	Medicine	Arts therapists	Chiropodists / Podiatrists	Dentistry	Dieticians	Occupational therapists	Orthopoptists	Paramedics	Pharmacy	Physiotheraphies	Prosthetists/ orthotists	Radiographer	Language therapists	Other	Inter-professional
Hospitals/ acute care	16	4	7	0	0	0	1	1	0	0	0	3	0	0	0	1	6
Ambulatory/ outpatients	6	1	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0
Aged care	6	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2
Community setting	15	4	0	0	0	0	0	1	0	0	0	3	0	0	0	1	8
General practice/family medicine	2	0	4	0	0	0	0	0	0	1	0	1	0	0	0	0	2
Professional practice	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dental and oral health	0	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0
Mental health	5	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	1
Not reported	25	4	2	0	0	0	1	0	0	0	0	1	0	1	0	2	7

4. Discussion and recommendations

4.1 Discussion

This systematic map provides a description of research on workplace-based learning for UK undergraduate and pre-registration healthcare students. The use of systematic and transparent methods means that this report provides a unique, foundational resource for the systematic development of further research in the field. To our knowledge, this is the first report to systematically identify and characterise the UK literature on workplace-based learning for undergraduate and pre-registration students across multiple healthcare professions and settings. The map and accompanying database of studies provide an important initial step in a journey towards identifying an evidence-informed answer to the question of what characterises excellence in workplace-based learning in the health professions? The scope and complexity of this question is such that the journey towards greater understanding will have a number of paths and may need to be undertaken in stages. The systematic mapping of existing research approach allows this journey to proceed in a way that facilitates systematic, transparent incremental progress and helps to inform decisions on likely fruitful directions of travel. The map provides a foundation for (1) identifying gaps in the research field, and (2) developing strategic priorities for future research. These are discussed below.

4.1.1 Gaps in the field

This study mapped some of the descriptive characteristics of the identified studies. Therefore, we do not yet know what components actually define a good workplace-based learning experience because that will require additional analysis beyond the descriptive mapping carried out in this report. The number of studies identified is relatively few given the scale and spread of workplace-based learning in the UK. Within England, for example, workplace-based learning could be taking place in one of the 2300 hospitals, 58 mental health trusts, 36 community trusts, 11 ambulance trusts, or 10,500 GP practices in England (NHS Confederation 2013). There are thousands of undergraduate and pre-registration students in training in each year (e.g. there are approximately 6,500 new medical entrants and 18,000 new nursing students per year with more than 30,000 medical undergraduates and 50,000 nursing students in training at any one time). This systematic map, however, identified only 117 UK studies that have been published in the last ten years.

There are few large-scale studies, examining workplace-based learning across multiple organisations. The current field of research is characterized by small-scale studies, examining workplace-based learning delivered in a single institution. These findings conform to previous characterisations of the wider clinical education research literature (Dauphinee and Wood-Dauphinee 2004; Eva 2009; Mulholland *et al*. 2004; Rotgans 2012; Willis Commission 2012) in that only a small proportion of the studies examined workplace-based learning on a national level (n = 14) and most studies were small in scale. There were few studies with more than 500 participants (n = 7), and only some of these included students from multiple sites (e.g. Rees *et al*. 2013).

The map included few studies that examined workplace-based learning for students from pharmacy and the allied healthcare professions. The studies were largely confined to medical, nursing, dentistry and midwifery students. There were comparatively few studies of inter-professional workplace learning (n = 18).

Despite the growing recognition that a wider range of study designs and methodological practices can play a valuable role in the field (Eva 2013), the map suggests that particular approaches dominate. This map identified very few studies that examined the impact of

workplace-based learning using independent quantitative outcome measures (*n* = 6). There may be a number of reasons for this apparent gap in the research field. One reason maybe that learning in clinical practice may not be considered to be a distinct part of the educational process which requires separate quantitative impact assessment. Another that there are multiple challenges associated with developing rigorous experimental study designs within the context of workplace-based learning for healthcare professionals (Dauphinee and Wood-Dauphinee 2004). However in addition to the studies that did use independent quantitative outcome measures there were studies that reported using pre-post data collection designs and/or control groups suggesting a concern to investigate impacts of workplace-based learning that at least draw on some aspects of the this research approach.

It is also the case that there is a strong tradition within clinical education research of examining 'impact' by asking students or teachers about whether there has been any change in the student's knowledge, skills or attitudes. In this systematic map, such studies would have been described as 'perception studies'.

None of the studies included in the map reported quantitative measurements of the impacts of workplace-based learning on health service delivery or the quality of patient care. Currently, we can only examine the role of workplace-based learning in service delivery and patient care by considering perceptions of the educator (*n* = 52) or patient (*n* = 4).

4.1.2 Strategic priorities for future research

A strategic research pathway is set out in Figure 2. This diagram presents an approach for developing a research literature that can identify the characteristics of excellence in workplace-based learning.

This diagram should be read from left to right. The first column is based loosely on Kirkpatrick's levels of evidence (Kirkpatrick and Kirkpatrick 2009) and categorises the research field of workplace-based learning studies according to the nature of the study outcome and how it was measured which is referred to as type of evidence. As the diagram illustrates, there are four types of evidence presented: (a) studies that report changes in organisational or patient outcomes using quantitative, independent outcomes as a result of workplace-based learning, (b) studies that report changes in student behaviour using quantitative, independent outcomes as a result of workplace-based learning, (c) studies that report changes in student attitudes, skills or knowledge using quantitative, independent outcomes as a result of workplace-based learning, and (d) studies that report the views and experiences of workplace-based learning. These distinctions are not hierarchical categories. Using the systematic map findings, the number of studies (and examples) relevant to each evidence type have been identified in the second column. The third column then identifies strategic priorities for future research, illustrating the potential interplay between the existing evidence base and recommended priorities.

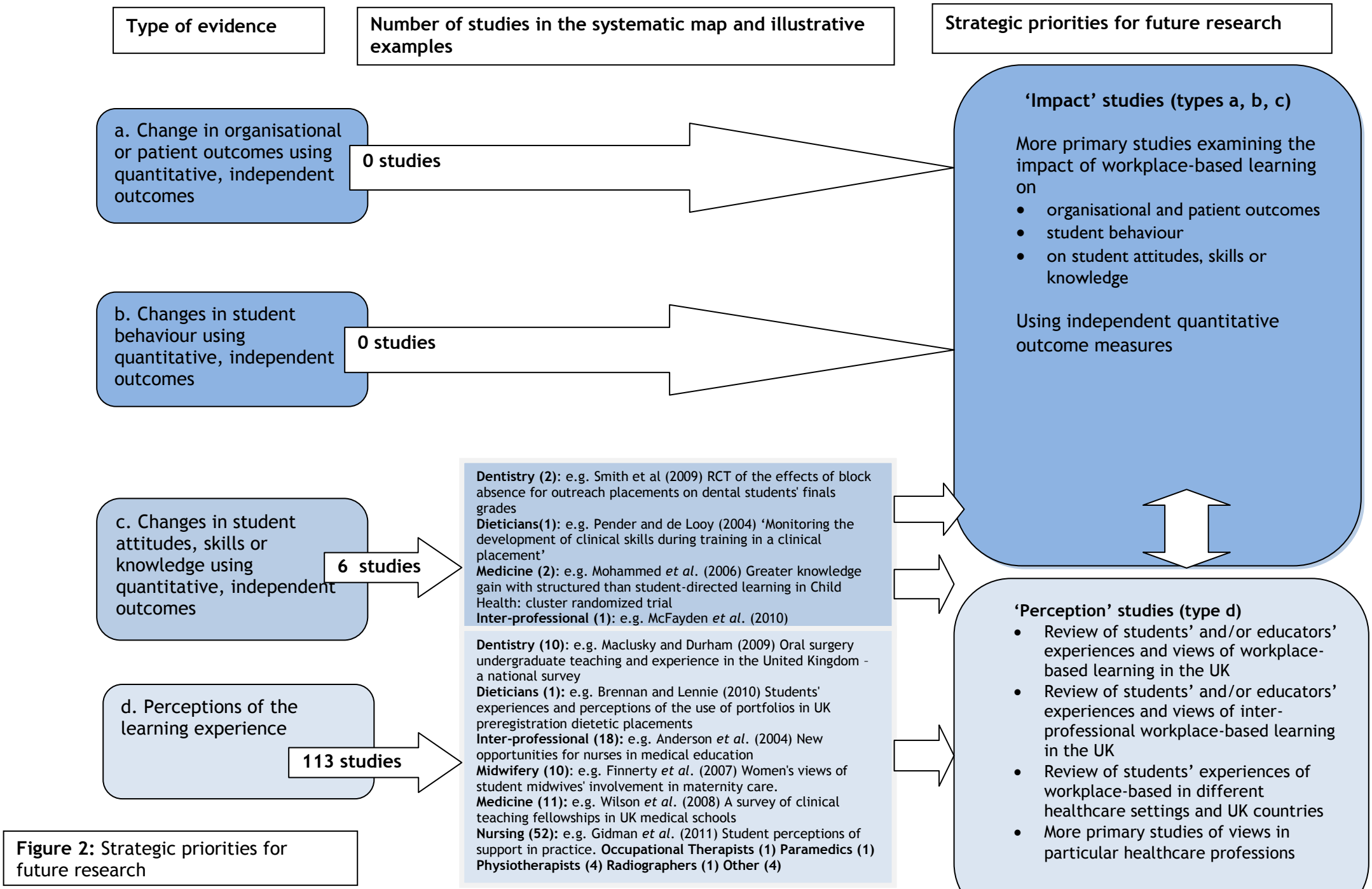

Figure 2: Strategic priorities for future research

Figure 2 suggests there are gaps in the UK body of literature and thus strategic priorities for a body of primary research. Research that investigates the impacts of workplace-based learning using independent quantitative measures of organisational or patient outcomes, student knowledge, attitudes and performance behaviour require more primary research across all the health professions. This type of study focusing on these outcomes should then be a priority for additional primary research in the field. The rationale for this recommendation is based on two main arguments. First, there is a need for robust, precise, quantitative, estimates of impact to inform choices in the design of workplace-based learning programmes for healthcare students, the organisations they work within, and patient populations. Second, the current UK policy context recognises the vital role that education and training of healthcare plays in the delivery of healthcare services (e.g. Francis 2013). It is therefore important to be able to measure and report the impact of such training processes on patients and healthcare organisations.

Figure two illustrates that there are a small number of studies (*n* = 6) of studies that report measure changes in student attitudes, knowledge or skills using independent quantitative outcome measures. As illustrated in the examples in the second column, these studies were carried out in different disciplines. The relatively limited number of this type of study means that further research is recommended to better understand the impact of workplace-based learning on these types of student learning outcomes across all the professions. The existing studies can potentially serve an important role in (1) informing and developing the study designs and outcome measures that are most appropriate for evaluating workplace-based learning in healthcare professions, and (II) help to prioritise the topic areas for in-depth reviews of 'perception' studies (evidence type d). To illustrate a well-designed study that uses independent quantitative outcome measures of impact may identify that a programme of workplace-based learning appears to be having different levels of impact on student learning outcomes in a particular healthcare profession. An in-depth review of students' experiences and views of workplace-based learning in this profession may be helpful to explore why this could be the case. Such analysis could then feed into further theorization of the mechanisms of the workplace-based learning in order to refine the programme and evaluate further.

The diagram illustrates the relatively large body of work (*n* = 113) that examines perceptions of the learning experience. This evidence (type d) covers different healthcare professions and includes the perceptions of students, educators and patient groups. Strategic research priorities, therefore, should focus on improving our understanding of this literature. Systematic, in-depth reviews would be an ideal tool for such an analysis and the diagram outlines a few example topics. These are briefly explained here:

- Review of students' and/or educators' experiences and perceptions of workplace-based learning in the UK. The map contains a potentially fruitful evidence base for understanding experiences and views of workplace-based learning. The preponderance of studies reporting student or educator views means that there is great scope to explore the experiences and perceptions of the learning process in a healthcare setting. The primary studies could be used to compare and contrast experiences across professions (as most of the included healthcare professions have at least one study) or undertake in-depth analysis of a particular profession (e.g. nursing);
- Review of students' and/or educators' experiences and views of inter-professional workplace-based learning in the UK. The map includes a group of studies (*n* = 18) about inter-professional workplace-based learning. This research could be used to better understand participants' experiences of learning alongside colleagues from other professions;

- Review of students' experiences of workplace-based in different healthcare settings and UK countries. With a spread of studies across different countries of the UK, the evidence base can offer insights into the experiences of workplace-based learning across the UK. However, only one healthcare profession, midwifery, has primary studies reporting on student experiences in each country of the UK. As the studies included in the map cover a range of healthcare settings, there is a scope to examine the experiences of a single profession (e.g. nursing) across multiple settings. It would also be possible to compare students' views of workplace-based learning within hospitals to consider how experiences vary across the professions.

The smaller number of studies in particular healthcare professions (e.g. dieticians, occupational therapy) means that prioritising primary studies in these contexts would be helpful. The existing body of views research is a potentially fruitful resource for informing the priority areas and outcome measures to be developed and applied in future studies aiming to rigorously investigate the impact of workplace-based learning using independent quantitative outcome measures. Student views of workplace-based learning, for example, may help to identify what and how to measure impacts on learning.

Figure two sets out a framework for understanding the UK research literature in workplace-based learning for healthcare students and identifies priority areas for future research. A key issue for the research community, however, is finding and securing funding and organisational drive for such research. The small and disorganised nature of the existing evidence base may be a reflection of the historically fragmented nature of the discipline. Research on healthcare professional education and training has only comparatively recently become recognised as a domain in its own right and different healthcare professional are different stages in with regard to developing research into their own professional training (Eva 2009; Rotgans 2012). This has meant that researchers and practitioners in the field may lack the institutional, political and policy support for a coherent systematic cumulative programme of research that addresses the needs of the modern healthcare workforce.

Health Education England has a responsibility to deliver the NHS Educational Outcomes Framework in which high quality workplace learning for healthcare staff and students to improve patient care is a key deliverable. Health Education England would therefore seem to be ideally placed to develop and drive forward programme of high quality research in this area perhaps in collaboration with National Institute for Health Research (NIHR), the Economic and Social Research Council (ESRC) and relevant professional and educational agencies. The NHS Educational Outcomes Framework is specified at a quite an abstract level with requirements such as "Excellent Education Outcome 2. The education and training delivered to the future and current health and social care workforce enables them to deliver consistently excellent and safe care." The technical specification for monitoring performance against these outcomes gives such statements more concrete practical form. However, so far the emphasis in the monitoring proposals has been on the use of existing data such as student surveys and surveys of NHS staff satisfaction. For example, the indicator proposed to monitor the above outcome for England is taken from the *National Student Survey* (NSS) and is the

> *"Percentage of university student respondents on health-related courses who agreed with the statement "I received appropriate supervision on my placement(s)".*

Evidence about the use of such monitoring approaches internationally was gathered in a rapid review carried out by the RAND corporation for the UK Department of Health (Nolte *et al*. 2011). The review found that that there was scarce evidence about how effectively

to monitor the quality of healthcare education and training and its impact on the quality of patient care. The UK Department of Health has recently (September 2012) launched a call for proposals for a research programme on evidence-based indicators for the Education Outcomes Framework[3]. However while such a programme may provide evidence about which measures may indicate 'excellence' in workplace learning it will not provide the necessary research evidence to identify how to create, support and facilitate excellence in workplace-based learning. This will require a large scale sustained and adequately resourced programme of research on workplace-based learning itself (rather than indicators for monitoring it) which HEE perhaps in collaboration with other organisations such as the Economic and Social Research Council and the HEA would be well placed to lead. Given the different commissioning and governance arrangements for healthcare professional education in the different countries of the UK different arrangements may be required in each different country.

In order to develop a research literature that can identify the characteristics of excellence in workplace-based learning, the following strategic priorities are recommended:

- more research in the field of workplace-based learning for undergraduate and pre-registration healthcare professionals;
- a new stream of research that examines the impact of workplace-based learning on organisations, patients, and student practice (using quantitative, independent outcome measures);
- more primary research that measures the impact of workplace-based learning on student learning (using quantitative, independent outcome measures);
- in-depth systematic reviews of student or educator views of workplace-based learning in the healthcare professions;
- more research on healthcare professions other than nursing.

4.1.3 Strengths and limitations of the systematic map

The strengths of this systematic map lay in the systematic and transparent way in which the mapping process has been undertaken. Further details of the main strengths are outlined below:

- search strategy – the development of the search strategy was informed by previous reviews, relevant research and the advisory group. The choice of search sources was informed by BEME guidance on systematic searching in medical education (Haig and Dozier 2003). The choice of search terms for electronic database searching was informed by a previous systematic search undertaken for a review in early medical education (Dornan *et al*. 2006). The advisory group, representing a range of professions, also contributed to the development of the search string and in the identification of key experts and websites;
- screening studies – the inclusion criteria were broad, covering multiple professions and settings, identifying research undertaken in the past ten years. The criteria were developed in collaboration with the advisory group. The screening process was systematic as all potentially relevant items were manually screened using the same criteria;
- describing studies – the application of a coding tool to UK studies means that we have been able to systematically characterise this literature on key dimensions –

[3] http://www.prp-ccf.org.uk/PRPFiles/Education%20Outcomes%20Framework%20-%20ITT.pdf

student participants, the workplace-based learning experience, the findings and the study methods.

The use of systematic and transparent methods means that we can have greater confidence in the description we present and conclusions we have drawn about the UK research field in workplace-based learning in undergraduate and pre-registration healthcare settings within the boundaries of the scope and limitations set for the systematic map. The limited resource and large scope of the field of enquiry meant that a number of steps were taking to focus and manage the review within the time and resource available. Taken together they may mean that the map is not as comprehensive as would be the case in a full systematic review – that is, there may be relevant studies missing from the map. These limitations should be taken into account when considering the findings of the map, for example, it would be premature to analyse or make conclusions about patterns of differences in research approaches between different professionals groups. Our view is that there may be more relevant studies of workplace-based learning for medical students in particular that were undertaken as studies of 'the hidden curriculum'. However, we would not expect that these studies would change our overall conclusions about the gaps in the existing literature and strategic priorities for future research.

The main limitation concerns the search strategy, which was not comprehensive in terms of the sources selected or the search terms used. The key issues are outlined below:

- search strategy – the search was limited to two electronic databases and used relatively short search strings (compared with more exhaustive approaches to systematic searching). This may mean that potentially relevant research was not identified. The select use of search terms meant that we may have missed out potentially fruitful, profession-specific terms. The inclusion of the keyword 'hidden curriculum', for example, may have identified more relevant studies on workplace-based learning in medical education. Further, the broad scope of the databases (i.e. Medline covers all aspects of the health literature) means that research in specialist fields may not have been identified. Specialist databases for particular healthcare professions were not used. Searching only for electronic reports means that potentially relevant research was not included. One study, for example, could not be retrieved in electronic form. Other systematic searching methods were not utilised, such as citation checking of relevant systematic reviews, due to the rapid nature of the search;
- screening – screening studies on title and abstracts means that the process is over-inclusive and so some studies included in the database may not actually meet the inclusion criteria (when screened on full text). This would not apply to studies included in the map report. Moreover, due to the resource constraints, limited quality assurance processes could be undertaken to ensure consistency among reviewers in their application of the inclusion criteria. The selection of UK studies for the systematic map (from the database of international studies) may not have identified all relevant studies. The method used to identify studies relied on explicit references to key geographical places in the UK reported in the title or abstract. There may be further UK-based studies in the database that did not provide this information in the abstract (and so were not included).
- describing studies – the coding tool in a systematic map is designed to provide descriptive illustration of the relevant studies. It was not possible to describe or analyse the rigour and relevance of the studies and so we do not have an understanding of the quality of the research conducted in the field.

5. References

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6. Appendices

6.1 Authorship of this report

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Jennifer Cleland (Association for the Study of Medical Education)
Jane Morris (National Association of Educators in Practice)

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6.2 Inclusion and exclusion criteria

Ref	Criteria	Inclusion	Exclusion
1	Electronic citation	Electronically available title and abstract	No abstract available
2	Language	Reported in English. If unsure, see the 'Comments' section of the citation details. It is in here that Cinahl citations code for the language as 'Language: English'. Medline citations also code for language and it is usually included at the end of the comments section.	Reported in any language other than English Exclude if the journal title is not English.
3	Publication date	Published after 2004	Published before 2004
4	Empirical research	Articles with explicit reporting of research methods and findings.	Not articles without explicit methods, e.g. book reviews, editorials, letters, policy papers, consultations. Not methodological papers. Relevant papers will be marked and used to inform the policy and practice background
5	Population	Undergraduates/pre-registration students of human healthcare: Doctors, nurses and allied health professions. Data and outcomes about workbased learning of under grads/pre registration students of human healthcare might be generated from other groups (e.g. registered nurses talking about their experience of pre-registration training or teachers/mentors talking about their undergraduate students) Include studies of teacher/preceptor's views when related to the relationship between health care student and teaching in the workplace	Not GPs, social workers, vets or students of these professions. Not postgraduate, continued professional development, programmes after training or registration complete. Exclude reports without clear distinct outcomes/data for under grads/pre reg students of human healthcare (e.g. exclude where data is only provided for mixed cohort of undergraduate and postgraduate/CPD students).

Ref	Criteria	Inclusion	Exclusion
6	Intervention	Workplace-based learning. Interaction between a qualified healthcare professional (and possibly patient) and an undergraduate and pre-registration student in healthcare for the purpose of learning, in workplace setting. Include studies where intervention is a modification of an existing WBL intervention. Include studies where technology is used to enhance WBL (so long as there is an element of practice/workplace setting too). Include studies that that look at the organisation, management or planning of work-based learning	Exclude simulation studies. Exclude studies that only focus on the development or evaluation of assessment tools (e.g. the reliability and validity of a tool). Exclude studies that identify WBL as a factor/predictor of career decision if WBL is not main focus of the study but just one of many factors identified.
7	Setting	Clinical and social care settings including hospitals, hospices, community settings and family medicine.	Not university settings Exclude studies that do not report separate findings for learning that takes place in the workplace (e.g. reports findings for learning that has taken place either in university or clinical setting)
8	INCLUDE Primary study	Include primary studies with empirical research	
9	INCLUDE Systematic review	Include reviews that make explicit reference to methods within the abstract (search sources and/or inclusion/exc criteria)	Exclude literature reviews
10	Marker: background	Use this marker if the item is not research but has highly relevant policy or practice content	
11	Marker: UK study	INCLUDED study that is reported to be conducted in the UK- Note only apply marker to INCLUDED studies	

6.3 Search strings for electronic databases

MEDLINE	
Search terms for population (undergraduate students)	**Search terms for intervention (workplace-based learning)**
MeSH terms: **(mesh.Exact("Education, Medical, Undergraduate") OR mesh.Exact("Students, Premedical" OR "Students, Public Health" OR "Students, Medical" OR "Students, Nursing" OR "Students, Dental" OR "Students" OR "Students, Pharmacy" OR "Students, Health Occupations")) OR** **Free text terms:** **((((chiropodist OR podiatrist OR dietician OR orthopedist OR prosthesis OR orthoepist OR paramedic OR physiotherapist OR radiographer) OR ("art therapist" OR "language therapist" OR "speech therapist" OR "occupational therapist")) OR (medical OR nursing OR dental OR pharmacy OR health)) AND (undergraduate* OR student*))**	**MeSH terms:** ((mesh.Exact("Mentors") OR mesh.Exact("Clinical Clerkship") OR mesh.Exact("Preceptorship")) **Free text terms:** OR ("mentorship" OR "mentorships") OR ("clinical clerkship" OR "clinical clerkships") OR ("preceptorship" OR "preceptorships") OR ("clinical placement" OR "clinical placements") OR ("clinical placement" OR "clinical placements") OR "service learning" OR "coaching" OR ("apprentice" OR "apprentices" OR "apprenticeship" OR "apprenticeships") OR "peer education" OR ("clinical internship" OR "clinical internships") OR "clinical training" OR "practice placement" OR ("MSF" OR "WPBAs" OR "CBD" OR "DOPS" OR "mini-CEX" OR "SLEs" OR "multi-source feedback" OR "workplace based assessments" OR "case-based discussion" OR "direct observation of procedural skills" OR "mini-clinical evaluation exercise for learning" OR "supervised learning events")
CINAHL	
MeSH terms: **(MH "Students, Health Occupations+") OR (MH "Students, Allied Health+") OR (MH "Students, Nursing+") OR (MH "Students, Undergraduate") OR** **Free text terms:** **((((chiropodist OR podiatrist OR dietician OR orthopedist OR prosthesis OR orthoepist OR paramedic OR physiotherapist OR radiographer) OR ("art therapist" OR "language therapist" OR "speech therapist" OR "occupational therapist")) OR (medical OR nursing OR dental OR pharmacy OR health)) AND (undergraduate* OR student*))**	**MeSH terms:** (MH "Preceptorship") OR (MH "Mentorship") OR (MH "Clinical Supervision") OR (MH "Student Placement") OR (MH "Service Learning") **Free text terms:** OR ("mentorship" OR "mentorships") OR ("clinical clerkship" OR "clinical clerkships") OR ("preceptorship" OR "preceptorships") OR ("clinical placement" OR "clinical placements") OR ("clinical placement" OR "clinical placements") OR "service learning" OR "coaching" OR ("apprentice" OR "apprentices" OR "apprenticeship" OR "apprenticeships") OR "peer education" OR ("clinical internship" OR "clinical internships") OR "clinical training" OR "practice placement" OR ("MSF" OR "WPBAs" OR "CBD" OR "DOPS" OR "mini-CEX" OR "SLEs" OR "multi-source feedback" OR "workplace based assessments" OR "case-based discussion" OR "direct observation of procedural skills" OR "mini-clinical evaluation exercise for learning" OR "supervised learning events")

6.4 Hand-searching record

Source	Method
Cochrane Effective Practice and Organisation Care group	Screened all listed completed EPOC reviews (70) on title (26 February 2013)
BEME Systematic Reviews	Screened all 'published reviews', 'BEME guides', 'Third party publications about BEME literature' on title (26 February 2013)
Centre for Reviews and Dissemination	MeSH terms for population: Students EXPLODE 2 OR Education, Medical, Undergraduate OR Free text terms for population: student OR students OR undergraduate OR undergraduates OR pre-registration AND MeSH terms for intervention: Mentors EXPLODE OR Clinical Clerkship EXPLODE OR Preceptorship EXPLODE OR Free text terms for intervention: mentorship OR mentorships OR clerkship OR clerkships OR placement OR placements OR preceptorship OR preceptorships OR service learning OR apprenticeship OR apprenticeships OR internship OR internships OR supervision (11 March 2013)
AMEE	'Publication' section of the website. Screened titles of all 'Occasional Papers', 'Education Guides' and 'AMEE Guide Series'. Most of the papers are not research. Papers not openly available so require log in. (26 February 2013)
ASME	'Publication' section. Screened on title (26 February 2013)
NAEP	'Articles' screened on title. (26 February 2013)
RCN	Publications searched with key free text terms (26 February 2013)
ADEE	'Publications'
HEA Subject Centre Archives Health Sciences and Practice	Screen title and abstracts/description of all 'Project reports'. Screen F/T of potential includes. Screen titles of 'Occasional Papers'
Health and Social Care Journal	Issue 1, Winter 2012: all contributions screened

6.5 Data extraction tool

1. Participants

- Students of which health professions?
  Please identify which student groups were under study. Select all that apply.
  - Nursing and Midwifery
  - Medicine
  - Arts therapists
  - Chiropodists/podiatrists
  - Dieticians
  - Occupational therapists
  - Orthoptists
  - Prosthetists/orthotists
  - Paramedics
  - Physiotherapists
  - Radiographers
  - Speech and language therapists
  - Dentistry
  - Pharmacy
  - Other
- Was the study inter-professional?
  - Yes: inter-professional
    Select this code if the study involves students from more than one health profession or other profession (e.g. social work)
  - No
- Number of student participants
  - Reported
    Specify the number of student participants that the study findings are based upon. Include the details of how many students were in the control and intervention groups (where appropriate). Include a reference of where in the report you found the figures.
  - Not reported
- Number of other participants
  - Not applicable
  - Reported
    Provide details about the number of other participants included in the study

findings, e.g. number of supervisors or preceptors that data was collected from. Include a reference of where in the report you found the figures.

- Not reported

2. Work based Learning (WBL)

- Type of WBL
  Select the work-based learning intervention that is evaluated by the study. Base this decision on the authors' description of the intervention and the descriptions set out below. If the work based learning intervention is not described below, add another code.
  - General/no formal type
    This code should encompass work based learning which is described in general terms such as practice placement, service learning, practice education, placement learning, clinical placement or work based learning.
  - Clerkship
    This is work based learning where students are required to rotate through different specialities and treat patients under the supervision of healthcare professionals. The clerkship is intended to offer students a wide range of experiences in different departments.
  - Peer mentoring
    This refers to mentoring programmes where senior students act as a role model and resource to other students.
  - International placement
  - Supervision/professional mentoring
    Supervision or mentoring by a qualified health professional
  - Formal name of WBL
  - No formal name/not reported
  - Reported
    Provide details if the intervention have a formal name.
- Stage of curriculum at which WBL was offered
  Select all that apply
  - First year of study
  - Second year of study
  - Third year of study
  - Fourth year of study
  - Final year of study
  - Not reported
- Country
  Select all that apply

    - UK
      Use this code when the article doesn't specify
    - England
    - Wales
    - Scotland
    - Northern Ireland
    - Not reported
- Setting of WBL
    - Hospitals/acute care
      This code should be applied to all hospital placements in wards, theatres, and acute settings (such as emergency, surgical, maternity)
    - Ambulatory/outpatients
      This includes all hospital placements involving outpatient and non-admitted patient care such as outpatient clinics, antenatal clinics, and home delivered services provided by hospital staff.
    - Aged care
      Includes all residential and community aged care facilities
    - Community setting
      Includes community health centres, community pharmacies, maternal and child health centres, health visiting
    - General practice/family medicine
    - Professional practice
      Includes non-hospital based practices including medical clinics such as audiology, allied health, retail pharmacy.
    - Dental and oral health
      Includes dental clinics
    - Mental health
      Includes mental health programs and alcohol and drugs services such as day programs.
    - Not reported
- Scale of WBL
  At what level is the wbl offered?
    - Organisational/institutional
      Organisational/institutional should be selected when the WBL is only offered at the level of a particular institution or organisation, such as a single hospital
    - National
    - Regional
      Across a number of sites in a particular region such as Yorkshire or California

    - Not reported

- Duration and frequency of WBL
  Describe length of time of WBL and how often students attend placements if there are multiple placements.

    - Not reported
    - Reported

3. Outcomes/the findings tell us about …
Select all that apply

- Views/perceptions
    - Student views
      Student's views/perceptions of the learning experience, its organisation, presentation, content, teaching methods, and quality of instruction
    - Educator views
      Educator/Supervisor/teacher views/perceptions of the learning experience, its organisation, presentation, content, teaching methods, and quality of instruction
    - Patient views
      Patient's views/perceptions of the student, educator, or overall experience.
- Impacts/outcomes
- Student learning impacts/outcomes
    - Student attitudes
      Reports modification in student attitudes or perceptions, for example, changes in attitudes towards teaching, change in self-confidence, change in empathy for others. For example, the study used data collection instruments that measured attitudes and their modification, i.e. scale that measured self-confidence.
    - Student knowledge
      Reports changes in student understanding of procedures, principles or concepts. For example, data on student's knowledge measured through tests or the number that meet course objectives.
    - Student skills
      Reports changes in student's skills such as communication skills, decision making, independent learning. The study used data collection instruments that measured skills.
    - Student behaviour
      Reports changes in behaviour and student's application of learning (e.g. new skills and knowledge) in the workplace setting. The study used data collection instruments to measure behaviour, e.g. performance of clinical procedures.
  - Educator impacts
    Reports changes in the educator's performance as a direct result of the wbl. The

study used data collection instruments to measure the educator's e.g. attitudes towards students and teaching.

- Patient impacts
  Reports impacts on patients attributable to WBL. Reports impacts on patients attributable to WBL. For example, studies collected patient clinical data.
- Organisational impacts
  Reports changes in the organizational/delivery of care, attributable to WBL. For example, studies may measure the impact of WBL on organisational data such staff ratios, consultation times.
- Only views
- Only impacts
- Both views and impacts

4. Study Design

- Timing of evaluation
  - During only
  - Pre and post WBL
  - During and post WBL
  - Post WBL
- What did the control/comparison group receive?
  - Not applicable (one group only)
  - No WBL
  - Alternative WBL
  - Treatment as usual (i.e. normal learning format)
  - Not reported
- What methods were used to collect data?
  - Questionnaire/survey instrument completed by student
  - Questionnaire/survey instrument completed by supervisor/mentor, etc.
  - Self-completion report or diary
  - One-to-one interview (face-to-face, telephone)
  - Focus group interview
  - Observation
  - Clinical test

    - Patient outcomes data
    - Not reported
- What types of data are reported in the study findings?
    - Both qualitative and quantitative
    - Only quantitative
- Only qualitative
- What methods were used to analyse the data?
    - Reported
      Add basic details
    - Not reported
- Exclude on full text
  Select reason for excluding on full text
    - Not evaluation of WBL
      There is no data or findings that evaluate WBL
    - Not healthcare students, not separate UK findings

6.6 Findings: workplace-based learning in inter-professional contexts

Eighteen studies examined undergraduate and pre-registration workplace-based learning in an inter-professional context.

Which healthcare professions were examined?
As Table 6.6.1 illustrates, 14 of the inter-professional studies involved nursing students, eight involved medical undergraduates, seven included midwives, and occupational therapists, physiotherapists and 'other' professions were each included in six studies. Few studies included students from the remaining professions. Studies included students from various stages of their education, from the first to the final year of study. Most of the studies (*n* = 13), however, did not report this information.

Table 6.6.1: Healthcare professions in inter-professional studies

Healthcare professions	Number of studies
Nursing	14
Medicine	8
Midwifery	7
Occupational therapists	6
Physiotherapists	6
Other	6
Speech and language therapists	3
Radiographers	2
Pharmacy	2
Paramedics	1
Dieticians	1
Chiropodists/podiatrists	1
Art therapists	0
Orthoptists	0
Prosthetists	0
Dentistry	0

What does the research tell us about?
All of the studies examined student views of inter-professional workplace-based learning (see Tables 6.6.2 and 6.6.3). Half (*n* = 9) also considered educator views. Only one study also examined the impacts of workplace-based learning. These focused on student learning outcomes, specifically a change in student attitudes.

Table 6.6.2: Type of research findings

What do the findings tell us about?	Number of studies
Views of workplace-based learning	17
Impacts of workplace-based learning	0
Both views and impacts	1

Table 6.6.3: Research examining views of inter-professional workplace-based learning (not mutually exclusive)

Whose views/perceptions?	Number of studies
Student views	18
Educator views	9
Patient views	1

What research approaches were used?
As Table 6.6.4 illustrates, the majority of the studies reported both qualitative and quantitative data (*n* = 12). One study reported only quantitative findings and the other five used qualitative data. Common data collection methods included questionnaires and interviews (see Table 6.6.5). Self-complete reports, clinical test data or patient outcome data were not used in the inter-professional workplace-based learning literature.

Table 6.6.4: Types of data

Types of data reported in the study findings	Number of studies
Both qualitative and quantitative	12
Only qualitative	5
Only quantitative	1

Table 6.6.5: Research methods used to collect data (not mutually exclusive)

Data collection methods	Number of studies
Questionnaire/survey instrument completed by student	14
One-to-one interview (face-to-face, telephone)	9
Focus group interview	8
Questionnaire/survey instrument completed by supervisor/mentor, etc	3
Observation	2
Self-completion report or diary	0
Clinical test	0
Patient outcomes data	0
Not reported	0

What type of workplace-based learning was examined?
Most of the studies (*n* = 15) did not examine a formal type of workplace-based learning but focused on practice placements in inter-professional contexts. There were three studies that explicitly focused on a particular type of learning: student supervision/professional mentoring (see Table 6.6.6). The duration of the workplace-based learning ranged from 12 hours to four weeks. Nine studies did not report levels of contact. The majority of studies examined practice learning that was offered at one healthcare organisation (*n* = 11) with a smaller proportion examining regional practice (*n* = 4) (see Table 6.6.7).

Table 6.6.6: Type of workplace-based learning

Type	Number of studies
General/no formal type	15
Supervision/professional mentoring	3
Peer mentoring	0
Clerkship	0
International placement	0

Table 6.6.7: Scale of the workplace-based learning

The level at which workplace-based learning was offered?	Number of studies
One organisation/institution	11
Regional	4
Nationwide	1
Not reported	2

The studies examined workplace-based inter-professional learning across different parts of the UK but not in Northern Ireland or Wales (see Table 6.6.8). The most common settings for inter-professional learning were community or hospital locations (see Table 6.6.9). There were no studies in some settings: outpatients, mental health, dental health or professional practice.

Table 6.6.8: UK Country examined by the inter-professional research

Country	Number of studies
England	7
UK	6
Scotland	3
Not reported	2
Wales	0
Northern Ireland	0

Table 6.6.9: Setting of workplace-based learning examined by the inter-professional research (not mutually exclusive)

Setting of workplace-based learning	Number of studies
Community setting	8
Hospitals/acute care	6
Aged care	2
General practice/family medicine	2
Not reported	7
Mental health	1
Ambulatory/outpatients	0
Professional practice	0

6.7 Findings: workplace-based learning in pre-registration nursing

Fifty-two studies examined workplace-based learning in pre-registration nursing. Inter-professional studies of nursing are not included in this section.

What does the research tell us about?
All of the nursing research examined views, perspectives or experiences of workplace-based learning. These included student views (*n* = 43) and educator views (*n* = 24) (see Table 6.7.1). None of the studies examined impacts of workplace-based learning.

Table 6.7.1: Research examining views of nursing workplace-based learning (not mutually exclusive)

Whose views/perceptions?	Number of studies
Student views	43
Educator views	24
Patient views	0

What research approaches were used?
Half of the nursing was qualitative in nature: 27 of the studies only reported qualitative findings compared to eight that only used quantitative data (See Table 6.7.2). Seventeen studies reported both qualitative and quantitative findings. The data collection methods are outlined in Table 6.7.3. Many studies used a variety of methods, with interviews and questionnaires forming the most common approaches. Two data collection methods that were not used by any of the studies: clinical tests and patient outcomes data.

Table 6.7.2: Types of data

Types of data reported in the study findings	Number of studies
Only qualitative	27
Both qualitative and quantitative	17
Only quantitative	8

Table 6.7.3 Research methods used to collect data (not mutually exclusive)

Data collection methods	Number of studies
One-to-one interview (face-to-face, telephone)	23
Focus group interview	23
Questionnaire/survey instrument completed by student	22
Questionnaire/survey instrument completed by supervisor/mentor, etc.	8
Self-completion report or diary	5
Observation	4
Not reported	0
Clinical test	0
Patient outcomes data	0

What type of workplace-based learning was examined?
The majority of studies (*n* = 34) examined pre-registration nurses in general forms of workplace-based learning (see Table 6.7.4). Sixteen studies focused on supervision or mentoring within practice placements, three examined peer mentoring, and one considered international placements in a workplace setting. The duration and frequency of

the placement learning was not reported by most studies (*n* = 35). Of those studies that did report these details, single and multiple placements were examined, ranging from four to 12 weeks in length. As illustrated in Table 6.7.5, almost half of the studies examined workplace-based learning that was specific to one institution (*n* = 23). A third of the studies focused on regional programmes of workplace-based learning (*n* = 16). The remaining studies examined nationwide practice placements (*n* = 3) or such details were not reported by the study (*n* = 10). The students that undertook these placements, as reported by the study, were at different stages of their training (see Table 6.7.6).

Table 6.7.4: Type of workplace-based learning

Type	Number of studies
General/no formal type	34
Supervision/professional mentoring	16
Peer mentoring	3
International placement	1
Clerkship	0

Table 6.7.5: Scale of the workplace-based learning

The level at which workplace-based learning was offered?	Number of studies
One organisation/institution	23
National	3
Regional	16
Not reported	10

Table 6.7.6: Stage of curriculum (not mutually exclusive)

Stage of curriculum at which workplace learning was undertaken	Number of studies
First year of study	10
Second year of study	9
Third year of study	10
Fourth year of study	1
Final year of study	4
Not reported	25

The studies examined workplace-based learning in a range of healthcare settings and across different parts of the UK (see Table 6.7.7). Almost half of the studies did not report the healthcare setting for the placement. Of those that did, the highest number of studies examined pre-registration training in hospital (*n* = 21) or community settings (*n* = 20). The studies were carried out in different parts of the UK, mainly in England or the UK more generally. There is limited research on workplace-based learning in Northern Ireland (*n* = 1).

Table 6.7.7: Number of studies reporting setting of workplace learning

Setting	UK	England	Wales	Scotland	Northern Ireland	Not reported
Hospitals/acute care	7	7	2	0	0	1
Ambulatory/ outpatients	2	3	1	0	0	0

Aged care	2	2	1	0	0	1
Community setting	7	4	2	0	0	2
General practice/family medicine	0	2	0	0	0	0
Mental health	2	0	1	1	0	1
Not reported	9	7	3	3	0	3

6.8 Findings: workplace-based learning in pre-registration midwifery

Ten studies examined workplace-based learning in pre-registration midwifery. Inter-professional studies of midwifery are not included in this section.

What does the research tell us about?
All of the midwifery research examined views, perspectives or experiences of workplace-based learning (see Table 6.8.1). These included student views (*n* = 8) and educator views (*n* = 4) and patient views (*n* = 1) (see Table 6.8.2).

Table 6.8.1: Type of research findings

What do the findings tell us about?	Number of studies
Views of workplace-based learning	10
Impacts of workplace-based learning	0
Both views and impacts	0

Table 6.8.2: Research examining views of midwifery students' workplace-based learning (not mutually exclusive)

Whose views/perceptions?	Number of studies
Student views	8
Educator views	4
Patient views	1

What research approaches were used?
Quantitative and qualitative approaches were used by the studies (see Table 6.8.3). The data collection methods are outlined in Table 6.8.4. Many studies used a variety of methods, with interviews and questionnaires forming the most common approaches. Two data-collection methods that were not used by any of the studies: clinical tests and patient outcomes data.

Table 6.8.3: Types of data

Types of data reported in the study findings	Number of studies
Only qualitative	6
Both qualitative and quantitative	4
Only quantitative	0

Table 6.8.4: Research methods used to collect data (not mutually exclusive)

Data collection methods	Number of studies
One-to-one interview (face-to-face, telephone)	6
Focus group interview	6
Questionnaire/survey instrument completed by student	4
Observation	4
Questionnaire/survey instrument completed by supervisor/mentor, etc.	2
Self-completion report or diary	2
Not reported	0
Clinical test	0
Patient outcomes data	0

What type of workplace-based learning was examined?
The majority of studies (*n* = 9) examined midwifery students in general forms of workplace-based learning (see Table 6.8.5). One study focused specifically on supervision or mentoring within practice placements. As illustrated in Table 6.8.6, the studies examined workplace-based learning in one institution (*n* = 5), at regional (*n* = 3) and national levels (*n* = 2). The students that undertook these placements, as reported by the study, were at different stages of their training.

Table 6.8.5: Type of workplace-based learning

Type	Number of studies
General/no formal type	9
Supervision/professional mentoring	1
Peer mentoring	0
International placement	0
Clerkship	0

Table 6.8.6: Scale of the workplace-based learning

The level at which workplace-based learning was offered?	Number of studies
One organisation/institution	5
National	3
Regional	2
Not reported	0

The studies examined workplace-based learning in hospital (*n* = 4), community (*n* = 4) or outpatient settings (*n* = 1) (See Table 6.8.7). The studies were carried out in different parts of the UK, mainly in England (*n* = 7) or the UK more generally (*n* = 2). There is limited research on workplace-based learning in Scotland (*n* = 1), Wales (*n* = 1) and Northern Ireland (*n* = 1) (see Table 6.8.8).

Table 6.8.7: Setting of workplace-based learning (not mutually exclusive)

Setting of workplace-based learning	Number of studies
Community setting	4
Hospitals/acute care	4
Not reported	4
Ambulatory/outpatients	1
Mental health	0
Professional practice	0
Aged care	0
General practice/family medicine	0

Table 6.8.8: UK Country (not mutually exclusive)

Country	Number of studies
England	7
UK	2
Scotland	1
Wales	1
Not reported	1
Northern Ireland	1

6.9 Findings: workplace-based learning in undergraduate medicine

Thirteen studies examined workplace-based learning for medical undergraduates. Inter-professional studies of medical students are not included in this section.

What does the research tell us about?
As illustrated in Table 6.9.1, the vast majority of the studies examined views, perspectives or experiences of workplace-based learning (*n* = 11). The studies reported the views of the medical students (*n* = 7) and/or the educator (*n* = 5). None of the studies examined patient views about workplace-based learning (see Table 6.9.2). A total of two studies reported impacts of workplace-based learning. These examined modifications of students' knowledge (*n* = 2) as a result of their training in a clinical setting.

Table 6.9.1: Type of research findings

What do the findings tell us about?	Number of studies
Views of workplace-based learning	11
Impacts of workplace-based learning	2
Both views and impacts	0

Table 6.9.2: Research examining views of medical workplace-based learning (not mutually exclusive)

Whose views/perceptions?	Number of studies
Student views	7
Educator views	5
Patient views	0

What research approaches were used?
Similar proportions of the studies used qualitative or quantitative approaches: five studies used both forms of data, four studies only reported quantitative data and four reported qualitative findings only (see Table 6.9.3). The data collection methods are outlined in Table 6.9.4. Many studies used a variety of methods, with questionnaires forming the most common approach. Self-complete diaries and patient outcomes data were not used in any studies.

Table 6.9.3: Types of data

Types of data reported in the study findings	Number of studies
Only qualitative	4
Both qualitative and quantitative	5
Only quantitative	4

Table 6.9.4: Research methods used to collect data (not mutually exclusive)

Data collection methods	Number of studies
Questionnaire/survey instrument completed by student	6
Questionnaire/survey instrument completed by supervisor/mentor, etc.	4
One-to-one interview (face-to-face, telephone)	1
Focus group interview	3
Observation	1
Clinical test	1
Self-completion report or diary	0
Patient outcomes data	0
Not reported	0

What type of workplace-based learning was examined?
The majority of studies (*n* = 9) examined undergraduate medical students undertaking general forms of workplace-based learning (see Table 6.9.5). Of those studies that focused on particular types of practice learning, three studies examined clerkships and one focused on supervision or mentoring. The duration and frequency of the placement learning was not reported by seven of the studies. Of those studies that did report these details, placements lasted between two and six weeks. As illustrated in Table 6.9.6, the majority of studies reported findings about workplace-based learning in one institution (*n* = 8). Four of the studies examined workplace-based learning that was delivered nationwide and one focused on regional practice placements. The students that undertook these placements were at the latter stages of their training (see Table 6.8.7).

Table 6.9.5: Type of workplace-based learning

Type	Number of studies
General/no formal type	9
Clerkship	3
Supervision/professional mentoring	1
Peer mentoring	0
International placement	0

Table 6.9.6: Scale of the workplace-based learning

The level at which workplace-based learning was offered?	Number of studies
One organisation/institution	8
National	4
Regional	1
Not reported	0

Table 6.8.7: Stage of curriculum

Stage of curriculum at which workplace learning was undertaken	Number of studies
First year of study	0
Second year of study	0
Third year of study	0
Fourth year of study	5
Final year of study	5
Not reported	4

The studies examined workplace-based learning across different parts of the UK with the exception of Northern Ireland (see Table 6.9.8). Few studies were carried out in Scotland (*n* = 2) or Wales (*n* = 1). Hospitals were the most common healthcare setting for the workplace-based learning (*n* = 7), followed by general practice (*n* = 4) (see Table 6.9.9).

Table 6.9.8: UK country examined by the medical research

Country	Number of studies
England	5
UK	5
Scotland	2
Wales	1
Northern Ireland	0
Not reported	0

Table 6.9.9: Setting of workplace-based learning examined by the medical research (not mutually exclusive)

Setting of workplace-based learning	Number of studies
Community setting	0
Hospitals/acute care	7
Aged care	0
General practice/family medicine	4
Ambulatory/outpatients	2
Professional practice	0
Mental health	0
Not reported	2

6.10 Findings: workplace-based learning in undergraduate dentistry

Eleven studies examined workplace-based learning for undergraduate dentistry students.

What does the research tell us about?
As illustrated by Tables 6.10.1 and 6.10.2, nine of the studies examined views about workplace-based learning for undergraduate dentistry students. Eight of these studies reported student views, four also included educator perceptions and two examined patient views.

Two studies measured the impacts of practice placements on student learning (one of these studies also examined student views). Both studies measured modifications in student skills, and one study also examined changes in student attitudes and the other measured student knowledge.

Table 6.10.1: Type of research findings

What do the findings tell us about?	Number of studies
Views of workplace-based learning	9
Impacts of workplace-based learning	1
Both views and impacts	1

Table 6.10.2: Research examining views of dentistry workplace-based learning (not mutually exclusive)

Whose views/perceptions?	Number of studies
Student views	8
Educator views	4
Patient views	2

What research approaches were used?
The majority of the studies used a quantitative approach (*n* = 7). Three studies also used qualitative data and only one was solely qualitative (See Table 6.10.3). The most common data collection method was questionnaire/survey instrument.

Table 6.10.3: Types of data

Types of data reported in the study findings	Number of studies
Only qualitative	1
Both qualitative and quantitative	3
Only quantitative	7

Table 6.10.4: Research methods used to collect data (not mutually exclusive)

Data collection methods	Number of studies
Questionnaire/survey instrument completed by student	8
Questionnaire/survey instrument completed by supervisor/mentor, etc.	4
One-to-one interview (face-to-face, telephone)	1
Focus group interview	0
Observation	0
Clinical test	1
Self-completion report or diary	1

Patient outcomes data	0
Not reported	0

What type of workplace-based learning was examined?
All of the studies examined general forms of workplace-based learning (see Table 6.10.5). The duration of the placements was reported by six studies, ranging from five weeks full-time training to one day per week for over a year. These practice placements were delivered at one organisation (*n* = 6), regionally (*n* = 3) or nationally (*n* = 2) (see Table 6.10.6). When undertaking this workplace-based learning, dentistry students were at different stages of their education (see Table 6.10.7).

Table 6.10.5: Type of workplace-based learning

Type	Number of studies
General/no formal type	11
Clerkship	0
Supervision/professional mentoring	0
Peer mentoring	0
International placement	0

Table 6.10.6: Scale of the workplace-based learning

Findings based on data collected from how many settings?	Number of studies
One organisation/institution	6
National	2
Regional	3
Not reported	0

Table 6.10.7: Stage of curriculum

Stage of curriculum at which workplace learning was undertaken	Number of studies
First year of study	1
Second year of study	2
Third year of study	3
Fourth year of study	5
Final year of study	6
Not reported	3

The studies examined all UK countries except Scotland (see Table 6.10.8). The setting for all of the studies was dental and oral health.

Table 6.10.8: UK Country examined by the dentistry research

Country	Number of studies
England	4
UK	4
Scotland	0
Wales	3
Northern Ireland	1
Not reported	0

6.11: Characteristics of included studies

Study	Study participants	Workplace-based learning	The findings tell us about …	Study methods
Aldridge (2012)	**Students of which health professions?** • Medicine **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *1. Of 77 on student attachments, 74 and 70 completed the Day 1 and Day 10 tests respectively; 30 randomly selected for 12 month test - 19 of these attended. 2. 50 students - Forty-four students (88%) completed the end of attachment questionnaire 3. 50 students 2010; 61 2011 (106 completed questionnaire)* **Number of other participants** • Not applicable	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • Scotland **Setting** • Ambulatory/outpatients **Scale** • Regional **Duration and frequency** • Reported [Info] *10 half-day clinical sessions over a two-week attachment* **Stage of curriculum at which WBL was offered** • Fourth year of study [Info] *penultimate year of study*	**Student learning impacts** • Student knowledge	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student • Observation **What types of data are reported in the study findings?** • Only quantitative **What methods were used to analyse the data?** • Reported [Info] *Data was tabulated in Excel (Microsoft, California) then exported into R for graphing and statistical analysis*
Anderson (2004)	**Students of which health professions?** • Medicine **Was the study inter-professional?** • Yes: inter-professional	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported	**Views** • Student • Educator	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student • One-to-one interview (face-to-face, telephone)

	Number of student participants • Reported [Info] *517 medical students* **Number of other participants** • Reported [Info] *88 nurses*	**Country** • England **Setting** • Community setting **Scale** • Organisational/institutional **Duration and frequency** • Reported [Info] *4 weeks single placement* **Stage of curriculum at which WBL was offered** • Not reported		• Focus group interview **What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Not reported
Anderson (2009)	**Students of which health professions?** • Nursing • Midwifery • Medicine • Pharmacy • Speech and language therapists • Other **Was the study inter-professional?** • Yes: inter-professional **Number of student participants** • Not reported [Info] *spans different groups/data collection activities over 10 years*	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • Reported [Info] *Health in the Community – component of Leicester Model of Interprofessional Education* **Country** • UK **Setting** • Community setting **Scale** • Organisational/institutional **Duration and frequency** • Not reported	**Views** • Student	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student • Focus group interview **What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Reported [Info] *The quantitative data from student questionnaires was analysed using the statistical package SPSS.*

	Number of other participants • Not reported [Info] *patients*	**Stage of curriculum at which WBL was offered** • Not reported		*All qualitative data (free text student comments and transcribed focus group data) was typed into Microsoft word and analysed separately by two researchers for repeated themes within each professional group. Themes were identified, coded and sorted using the principles from stages one and two of grounded theory (Strauss and Corbin 1998).*

Study	Study participants	Workplace-based learning	The findings tell us about …	Study methods
Anderson (2010)	**Students of which health professions?** • Medicine • Other **Was the study inter-professional?** • Yes: inter-professional **Number of student participants** • Reported [Info] *Three student focus groups were held with randomly selected students, within a week of the course completion. Two were with medical students (n = 25) and*	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • Reported [Info] *Leicester Model of Interprofessional Education - from this developed a module for wbl with people with disabilities called Learning from Lives We report here on the experiences of this module,* **Country** • UK **Setting**	**Views** • Student • Educator • Patient	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student • One-to-one interview (face-to-face, telephone) • Focus group interview **What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Reported

	one with social work students (n = 18). From the cohort of 150 students, 77% (n = 116) of the questionnaires were returned (83% medical students, 66% social work students). **Number of other participants** • Reported [Info] *Service users (n = 39) were randomly allocated to be interviewed or receive a questionnaire.*	• Community setting **Scale** • Organisational/institutional **Duration and frequency** • Reported [Info] *4 week period - 2005* **Stage of curriculum at which WBL was offered** • Not reported		[Info] *SPSS and qualitative analysis*
Anderson (2010)	**Students of which health professions?** • Nursing • Midwifery • Medicine • Speech and language therapists **Was the study inter-professional?** • Yes: inter-professional **Number of student participants** • Reported [Info] *100 students [medicine (n = 50); nursing (n = 26); speech and language therapy (S&LT) (n = 9); social work BA (n = 10) and social work MA (n = 5)]* **Number of other participants** • Reported	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • Reported [Info] *ward-based interprofessional learning using the Leicester Model of Interprofessional Education* **Country** • UK **Setting** • Hospitals/acute care • Aged care **Scale** • Organisational/institutional **Duration and frequency** • Reported	**Views** • Student	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student • Questionnaire/survey instrument completed by supervisor/mentor etc • Focus group interview **What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Not reported

	[Info] *social work BA (n = 10) and social work MA (n = 5)] Seventeen tutors completed a post-course questionnaire (five academic teachers and 12 clinical tutors).*	[Info] *1 week full time - once* **Stage of curriculum at which WBL was offered** • Not reported		
Anderson (2011)	**Students of which health professions?** • Nursing • Midwifery • Medicine • Pharmacy • Speech and language therapists • Other **Was the study inter-professional?** • Yes: inter-professional **Number of student participants** • Reported [Info] *109 students - includes social work students* **Number of other participants** • Reported [Info] *20 interviews with service users*	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • UK **Setting** • Community setting **Scale** • Organisational/institutional **Duration and frequency** • Reported [Info] *3 x 1 day workshops* **Stage of curriculum at which WBL was offered** • Not reported	**Views** • Student • Educator	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student • One-to-one interview (face-to-face, telephone) • Focus group interview **What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Reported

Study	Study participants	Workplace-based learning	The findings tell us about …	Study methods
Andrew (2009)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *418 returned the questionnaire* **Number of other participants** • Not applicable	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • Reported [Info] *The Enhance Project* **Country** • Scotland **Setting** • Not reported **Scale** • Not reported **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • First year of study [Info] *first clinical placement*	**Views** • Student	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student **What types of data are reported in the study findings?** • Only quantitative **What methods were used to analyse the data?** • Reported [Info] *Using SPSS.*
Andrews (2006)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Not reported [Info] *Reports number of focus*	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • England **Setting** • Not reported	**Views** • Student	**What methods were used to collect data?** • One-to-one interview (face-to-face, telephone) • Focus group interview **What types of data are reported in the study findings?** • Only qualitative **What methods were used**

	groups (7) but not number of participants of these. **Number of other participants** • Reported [Info] *30 ex student nurses*	**Scale** • Organisational/institutional **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Not reported [Info] *throughout whole training*		**to analyse the data?** • Reported [Info] *Nvivo*
Armstrong (2010)	**Students of which health professions?** • Midwifery **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *145* **Number of other participants** • Not applicable	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • England **Setting** • Community setting **Scale** • Regional **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Final year of study	**Views** • Student	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student **What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Reported [Info] *Answers to closed questions coded and analysed in SPSS. Open-ended data analysed by content analysis.*

Ashmore (2012)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Not applicable **Number of other participants** • Reported [Info] *9 lecturers on mental health nurse training*	**Type of workplace-based learning** • Supervision/professional mentoring **Formal name of WBL** • No formal name/not reported **Country** • Not reported **Setting** • Mental health **Scale** • Organisational/institutional **Duration and frequency** • Reported [Info] *6 clinical placements - ? how long* **Stage of curriculum at which WBL was offered** • Not reported [Info] *whole of 3 year course*	**Views** • Educator	**What methods were used to collect data?** • One-to-one interview (face-to-face, telephone) **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Reported
Ayres (2007)	**Students of which health professions?** • Medicine **Was the study inter-professional?** • No **Number of student participants** • Reported	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • England **Setting**	**Views** • Student	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student • Focus group interview **What types of data are reported in the study findings?** • Only qualitative

	[Info] *A total of 6 interviews were conducted with an average attendance of 7 students (42 out of 74 students attending over the year - 57%)* **Number of other participants** • Not applicable	• Hospitals/acute care **Scale** • Organisational/institutional **Duration and frequency** • Reported [Info] *discipline-based 2-6 week attachments* **Stage of curriculum at which WBL was offered** • Fourth year of study [Info] *comments from 4th and 5th year students reported*		**What methods were used to analyse the data?** • Reported [Info] *thematic analysis of focus group transcripts using grounded theory. Same approach used to analyse feedback sheets.*

Study	Study participants	Workplace-based learning	The findings tell us about …	Study methods
Baglin (2009)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *6* **Number of other participants** • Not applicable	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • Not reported **Setting** • Community setting **Scale** • Organisational/institutional **Duration and frequency**	**Views** • Student	**What methods were used to collect data?** • Self-completion report or diary **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Reported

		• Reported [Info] *Twelve week single placement* **Stage of curriculum at which WBL was offered** • Second year of study		
Baillie (2012)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Not reported **Number of other participants** • Not applicable	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • England **Setting** • Hospitals/acute care • Aged care **Scale** • Organisational/institutional **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Not reported	**Views** • Student	**What methods were used to collect data?** • Focus group interview **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Reported [Info] *thematic*
Bluff (2008)	**Students of which health professions?** • Midwifery **Was the study inter-professional?**	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported	**Views** • Student • Educator	**What methods were used to collect data?** • One-to-one interview (face-to-face, telephone) **What types of data are**

	• No **Number of student participants** • Reported [Info] *20 student mws* **Number of other participants** • Reported [Info] *17 mws*	**Country** • England **Setting** • Hospitals/acute care • Ambulatory/outpatients • Community setting **Scale** • Organisational/institutional **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Not reported [Info] *refers to mix of junior and senior student participants*		**reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Reported [Info] *thematic*
Brand (2011)	**Students of which health professions?** • Dentistry **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *1248.* **Number of other participants** • Not applicable	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • England **Setting** • Dental and oral health **Scale** • Organisational/institutional **Duration and frequency**	**Views** • Student	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student **What types of data are reported in the study findings?** • Only quantitative **What methods were used to analyse the data?** • Reported [Info] *Data were entered in an Excel-spreadsheet. The rating scales questions were*

		• Not reported **Stage of curriculum at which WBL was offered** • First year of study • Second year of study • Third year of study • Fourth year of study • Final year of study		*analysed using the statistical software package SPSS version 15.0 for Windows (SPSS Inc., Chicago, IL, US). For overall analysis the Kruskal-Wallis test was used, followed by Mann-Whitney tests as post hoc procedure for pair wise comparisons. All levels of significance were set at P < 0.05.*
Bray (2007)	**Students of which health professions?** • Nursing • Midwifery • Medicine **Was the study inter-professional?** • Yes: inter-professional **Number of student participants** • Reported [Info] *Nursing - 174 Midwifery - 29 Medicine - 70* **Number of other participants** • Reported [Info] *Nursing mentors - 110 Midwifery mentors - 32 Medicine mentors - 21*	**Type of workplace-based learning** • Supervision/professional mentoring **Formal name of WBL** • No formal name/not reported **Country** • England **Setting** • Hospitals/acute care **Scale** • Regional **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Final year of study	**Views** • Student • Educator	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student • One-to-one interview (face-to-face, telephone) **What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Reported [Info] *Closed questions analysed using SPSS; open questions analysed by content analysis by two members of research team.*

Study	Study participants	Workplace-based learning	The findings tell us about …	Study methods
Brennan (2010)	**Students of which health professions?** • Dieticians **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *114 from 11 universities* **Number of other participants** • Not applicable	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported [Info] *use of reflective portfolios as a learning tool* **Country** • UK **Setting** • Not reported **Scale** • National **Duration and frequency** • Reported [Info] *a single 12 week placement or two 12 week placements*	**Views** • Student	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student **What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Reported [Info] *Data were analysed using spss, version 15.0 for Windows (SPSS Inc., Chicago, IL, US). The Mann-Whitney U-test and the Kruskal-Wallis test were used to analyse nonparametric data with two and three or more levels of data, respectively. Spearmans test was used to detect correlations between two sets of continuous data, mainly from likert scales. Open-ended questions analysed through content analysis.*
Brown (2008)	**Students of which health professions?** • Nursing **Was the study inter-professional?**	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported	**Views** • Student	**What methods were used to collect data?** • Focus group interview • Observation **What types of data are**

	• No **Number of student participants** • Not reported **Number of other participants** • Not reported [Info] *interviews with staff*	**Country** • England **Setting** • Aged care **Scale** • National **Duration and frequency** • Not reported [Info] *suggested that across 3 years of training - but unclear how long/how frequent* **Stage of curriculum at which WBL was offered** • Not reported		**reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Not reported
Carlisle (2009)	**Students of which health professions?** • Nursing • Midwifery **Was the study inter-professional?** • Yes: inter-professional **Number of student participants** • Not reported [Info] *Some indication but not clear and mixes pre and post registration students* **Number of other participants** • Reported [Info] *Yes reported as below - but*	**Type of workplace-based learning** • Supervision/professional mentoring **Formal name of WBL** • Reported [Info] *Role of the PEF - practice education facilitator* **Country** • Scotland **Setting** • Not reported **Scale** • National	**Views** • Student • Educator	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student • Questionnaire/survey instrument completed by supervisor/mentor etc • Focus group interview **What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Reported

	some lack of clarity/missing data 'Phase one surveyed all PEFs. The response was n = 84 (71%). Phase 2 – a mentor postal survey (n = 69, 26%), a face-to-face focus group discussion (n = 31), a telephone survey of key stakeholders (n = 34, 32%), including managers and mentors. Two consensus conferences were held, the first at the end of phase one (n = 19) which included the identification of case study sites. The second took place at the conclusion of data collection in the case study sites (n = 21) and enabled the participants to review the findings and suggest possible implications for practice'	**Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Not reported		[Info] *Quantitative*: *SPSS*. *Qualitaitve*: *thematic content analysis*

Study	Study participants	Workplace-based learning	The findings tell us about …	Study methods
Carnwell (2007)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Not applicable **Number of other participants** • Reported [Info] *National Health Service managers and Higher Education managers (nursing) - 22 in total*	**Type of workplace-based learning** • Supervision/professional mentoring **Country** • Wales **Setting** • Not reported **Scale** • Regional **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Not reported	**Views** • Educator	**What methods were used to collect data?** • Focus group interview **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Reported
Child (2011)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *12* **Number of other participants** • Not applicable	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • UK **Setting** • Not reported **Scale** • Organisational/institutional **Duration and frequency** • Not reported	**Views** • Student	**What methods were used to collect data?** • One-to-one interview (face-to-face, telephone) **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Reported [Info] *thematic*

		Stage of curriculum at which WBL was offered • Not reported		
Chowthi-Williams (2010)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *20 students* **Number of other participants** • Not applicable	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • Reported [Info] *Primary Care Pathway Programme* **Country** • England **Setting** • Community setting • General practice/family medicine **Scale** • Regional **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Final year of study	**Views** • Student	**What methods were used to collect data?** • One-to-one interview (face-to-face, telephone) • Focus group interview **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Not reported
Christiansen (2010)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No	**Type of workplace-based learning** • Peer mentoring **Formal name of WBL** • No formal name/not reported [Info] *peer learning partnerships - impact on learning in a practice setting*	**Views** • Student	**What methods were used to collect data?** • Focus group interview **What types of data are reported in the study findings?** • Only qualitative

	Number of student participants • Reported [Info] *54* **Number of other participants** • Not applicable	**Country** • UK **Setting** • Not reported **Scale** • Organisational/institutional **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • First year of study • Third year of study		**What methods were used to analyse the data?** • Reported [Info] *Narrative data analysed thematically. The transcripts and audio-tapes were analysed following the steps outlined by Ritchie and Spencer (1994). Data analysis began during data collection through careful group facilitation and following transcription, reflexive engagement with the data enabled familiarity with it as a whole, prior to its deconstruction.*
Clark (2009)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *565* **Number of other participants** • Reported [Info] *12 members of participating forums and relevant RCNstaff.*	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • Not reported **Setting** • Not reported **Scale** • National **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered**	**Views** • Student • Educator	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student • Focus group interview **What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Not reported

		• Not reported		
Clouder (2004)	**Students of which health professions?** • Occupational therapists **Was the study inter-professional?** • Yes: inter-professional **Number of student participants** • Not reported **Number of other participants** • Not reported [Info] *qualified physiotherapists*	**Type of workplace-based learning** • Supervision/professional mentoring **Formal name of WBL** • No formal name/not reported **Country** • UK **Setting** • Not reported **Scale** • Not reported **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Not reported	**Views** • Student	**What methods were used to collect data?** • One-to-one interview (face-to-face, telephone) • Observation **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Not reported
Collington (2012)	**Students of which health professions?** • Midwifery **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *From Table 1 (not clear if no's are mutually exclusive): Lead midwives for education: 56 (51 = questionnaire and 6*	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • England • Wales • Scotland • Northern Ireland **Setting** • Not reported	**Views** • Student • Educator	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student • Questionnaire/survey instrument completed by supervisor/mentor, etc. • One-to-one interview (face-to-face, telephone) • Focus group interview **What types of data are reported in the study findings?** • Only qualitative

	interviews) Midwife teachers: 265 (228 questionnaire, 37 focus group) Program Leads: 6 (interviews) Senior students (three year only as this group are pre-registration whereas those on short course are already qualified nurses): 205 (111 questionnaire, 94 Focus) **Number of other participants** • Reported [Info] *Midwife teachers: 257 Program Leads:6 Lead Midwives for education:57*	**Scale** • National **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Not reported		**What methods were used to analyse the data?** • Reported [Info] *Quali-thematic analysis*

Study	Study participants	Workplace-based learning	The findings tell us about …	Study methods
Craddock (2011)	**Students of which health professions?** • Dentistry **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *19 students* **Number of other participants** • Reported [Info] *15 dental practitioners from 9 practices Patients*	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • UK **Setting** • Dental and oral health **Scale** • Regional **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Fourth year of study • Final year of study	**Views** • Student • Educator • Patient	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student • Questionnaire/survey instrument completed by supervisor/mentor, etc. **What types of data are reported in the study findings?** • Only quantitative **What methods were used to analyse the data?** • Not reported
Cunningham (2006)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *134 returned the questionnaire; 9 interviews*	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • England **Setting** • Hospitals/acute care	**Views** • Student	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student • One-to-one interview (face-to-face, telephone) **What types of data are reported in the study findings?** • Both qualitative and quantitative

	Number of other participants • Not applicable	**Scale** • Not reported **Duration and frequency** • Not reported [Info] *part of foundation programme - first year.* **Stage of curriculum at which WBL was offered** • First year of study		**What methods were used to analyse the data?** • Reported [Info] *Descriptive statistics calculated using SPSS. Completed questionnaires collated according to whether student experiences were 'positive', 'non-positive' or 'mixed'. Interview transcripts read and re-read for significant statements. Findings grouped in relation to interview guide.*
Dando (2012)	**Students of which health professions?** • Nursing • Medicine • Occupational therapists • Physiotherapists **Was the study inter-professional?** • Yes: inter-professional **Number of student participants** • Reported [Info] *59* **Number of other participants** • Not applicable	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • England **Setting** • Hospitals/acute care **Scale** • Organisational/institutional **Duration and frequency** • Reported [Info] *Duration - 1 x 3 week placement*	**Views** • Student	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student **What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Not reported

		Stage of curriculum at which WBL was offered • Final year of study		
Davies (2011)	**Students of which health professions?** • Physiotherapists **Was the study inter-professional?** • Yes: inter-professional **Number of student participants** • Reported [Info] *FG = 12 students. 97 completed questionnaire* **Number of other participants** • Not applicable	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • England **Setting** • Not reported **Scale** • Organisational/institutional **Duration and frequency** • Reported [Info] *Exposure to IPL over 3-4 year period* **Stage of curriculum at which WBL was offered** • Third year of study [Info] *Third and final year*	**Views** • Student	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student • Focus group interview **What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Reported [Info] *SPSS used to analyse questionnaire data. Positive and negative themes picked out from fg data.*
Deaville (2011)	**Students of which health professions?** • Medicine **Was the study inter-professional?** • No	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported	**Views** • Student • Educator	**What methods were used to collect data?** • One-to-one interview (face-to-face, telephone) • Focus group interview **What types of data are**

	Number of student participants • Reported [Info] *9* **Number of other participants** • Reported [Info] *Interviewee GP tutors (GP), Senior partner in GP practice, Consultants School of Medicine, etc. Total 19*	**Country** • Wales **Setting** • General practice/family medicine **Scale** • Organisational/institutional **Duration and frequency** • Reported [Info] *6 weeks* **Stage of curriculum at which WBL was offered** • Final year of study [Info] *5th year - think this is final*		**reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Reported [Info] *thematic*

Study	Study participants	Workplace-based learning	The findings tell us about …	Study methods
Doley (2005)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *15* **Number of other participants** • Not reported	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • Not reported **Setting** • Community setting **Scale**	**Views** • Student • Educator	**What methods were used to collect data?** • Focus group interview **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Not reported

	[Info] *Mentors*	• Organisational/institutional **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Final year of study		
Donald (2010)	**Students of which health professions?** • Medicine **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *29* **Number of other participants** • Not applicable	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • UK **Setting** • Hospitals/acute care **Scale** • Organisational/institutional **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Fourth year of study	**Views** • Student	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student **What types of data are reported in the study findings?** • Only quantitative **What methods were used to analyse the data?** • Reported [Info] *Statistical analysis to measure pre-placement scepticism and post-placement scepticism.*
Doughty (2009)	**Students of which health professions?** • Radiographers **Was the study inter-professional?**	**Type of workplace-based learning** • Supervision/professional mentoring **Formal name of WBL**	**Views** • Educator	**What methods were used to collect data?** • Questionnaire/survey instrument completed by supervisor/mentor etc

	• No **Number of student participants** • Not applicable **Number of other participants** • Reported [Info] *nine staff responding: professional development facilitator's (n = 4) and Link Tutor's (n = 5)*	• No formal name/not reported **Country** • England **Setting** • Not reported **Scale** • Organisational/institutional **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Not reported		**What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Not reported
Finnerty (2007)	**Students of which health professions?** • Midwifery **Was the study inter-professional?** • No **Number of student participants** • Not applicable **Number of other participants** • Reported [Info] *18 women who had had student involvement in their maternity care.*	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • England **Setting** • Hospitals/acute care • Community setting **Scale** • National **Duration and frequency** • Not reported	**Views** • Patient	**What methods were used to collect data?** • One-to-one interview (face-to-face, telephone) **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Reported [Info] *Triangulation of data with data from larger study. Content analysis of transcriptions of interviews. Codes validated and themes discussed in team.*

		Stage of curriculum at which WBL was offered • Not reported		
Gidman (2011)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *A total of four focus groups was undertaken to further explore the data obtained from the questionnaires (two with starter students (n = 15) and two with finisher students (n = 20) 272 - questionnaire* **Number of other participants** • Not applicable	**Type of workplace-based learning** • Supervision/professional mentoring **Formal name of WBL** • No formal name/not reported **Country** • England **Setting** • Not reported **Scale** • Organisational/institutional **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • First year of study • Third year of study	**Views** • Student	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student • Focus group interview **What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Reported [Info] *The questionnaire data were quantitatively analysed using Excel spreadsheets to elicit descriptive statistics (closed questions) and qualitatively analysed to produce themes (open questions). The focus group interviews were transcribed verbatim, coded and recurrent themes identified*
Glasper (2006)	**Students of which health professions?** • Nursing	**Type of workplace-based learning** • General/no formal type • Peer mentoring	**Views** • Student	**What methods were used to collect data?** • Focus group interview

	Was the study inter-professional? • No **Number of student participants** • Reported [Info] *Three groups: 14, 12, 8* **Number of other participants** • Not applicable	**Formal name of WBL** • No formal name/not reported **Country** • England • Wales **Setting** • Hospitals/acute care **Scale** • Organisational/institutional **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Final year of study		**What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Reported
Griggs (2012)	**Students of which health professions?** • Other **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *7 from first year and 7 from 2nd year of study attended non-mixed focus groups.* **Number of other participants** • Reported [Info] *3 mentors and 1 manager*	**Type of workplace-based learning** • Supervision/professional mentoring **Country** • England **Setting** • Community setting **Scale** • Regional **Duration and frequency** • Not reported	**Views** • Student • Educator	**What methods were used to collect data?** • One-to-one interview (face-to-face, telephone) • Focus group interview **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Reported [Info] *Grounded theory used to determine emerging themes*

	interviewed	**Stage of curriculum at which WBL was offered** • First year of study • Second year of study		
Hastings, (2006)	**Students of which health professions?** • Medicine **Was the study inter-professional?** • No **Number of student participants** • Not applicable **Number of other participants** • Reported [Info] *37 people in charge of organising clinical placements in hospital and general practice settings*	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • UK **Setting** • Hospitals/acute care • General practice/family medicine **Scale** • National **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Not reported	**Views** • Educator	**What methods were used to collect data?** • Questionnaire/survey instrument completed by supervisor/mentor, etc. **What types of data are reported in the study findings?** • Only quantitative **What methods were used to analyse the data?** • Not reported
Heaslip (2012)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No	**Type of workplace-based learning** • Supervision/professional mentoring **Formal name of WBL** • No formal name/not reported	**Views** • Student • Educator	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student • Questionnaire/survey instrument completed by supervisor/mentor, etc.

	Number of student participants • Reported [Info] *Questionnaires were distributed to 210 final year students and 107 were completed (51%)* **Number of other participants** • Reported [Info] *112 (86%) of the 130 mentors available, completed and returned the questionnaire*	**Country** • UK **Setting** • Not reported **Scale** • Organisational/institutional **Duration and frequency** • Reported [Info] *Implemented over 3 year period from 2005-6.* **Stage of curriculum at which WBL was offered** • Not reported		**What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Reported [Info] *Quantitative data were coded and inputted into the Statistical Package for the Social Sciences (SPSS). Where possible, chi-square analysis was undertaken to explore the significance of any results. The qualitative elements of the questionnaire were subjected to content analysis*
Study	**Study participants**	**Workplace-based learning**	**The findings tell us about …**	**Study methods**
Hewitt-Taylor (2006)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *2 chosen for pilot study* **Number of other participants**	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported [Info] *critical care placement - care of a child in the home.* **Country** • UK **Setting**	**Views** • Student • Educator	**What methods were used to collect data?** • One-to-one interview (face-to-face, telephone) **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Reported

	• Not reported [Info] *mentors*	• Community setting **Scale** • Organisational/institutional **Duration and frequency** • Reported [Info] *4 weeks placement* **Stage of curriculum at which WBL was offered** • Not reported		[Info] *Interviews transcribed and transcripts coded into themes, then categorised into clusters*
Higgins (2005)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *6* **Number of other participants** • Not applicable	**Type of workplace-based learning** • Supervision/professional mentoring **Formal name of WBL** • No formal name/not reported **Country** • UK **Setting** • Hospitals/acute care • Community setting **Scale** • Organisational/institutional **Duration and frequency** • Reported [Info] *single 6 week clinical placement*	**Views** • Student	**What methods were used to collect data?** • One-to-one interview (face-to-face, telephone) **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Reported [Info] *The interview transcripts were read and the tape recordings listened to on numerous occasions. Brief memos were recorded on the side of the transcripts wherever a change in tone of voice or emotion was evident. Gradually patterns of similar incidents, ideas or events,*

				began to emerge which were then given a code name. Each code was compared for similarity with other codes and grouped to form categories
Holt (2007)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *100* **Number of other participants** • Not applicable	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • UK **Setting** • Hospitals/acute care • Community setting • Mental health **Scale** • Not reported **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Second year of study [Info] *students from one university*	**Views** • Student	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student • Self-completion report or diary • Focus group interview **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Reported [Info] *Thematic approach. Transcripts of focus groups tested against student evaluations and self-reported learning outcomes. Three thematic groups emerged from these.*
Hughes (2011)	**Students of which health professions?** • Midwifery	**Type of workplace-based learning** • Supervision/professional	**Views** • Student	**What methods were used to collect data?** • Focus group interview

	Was the study inter-professional? • No **Number of student participants** • Reported [Info] *58* **Number of other participants** • Not applicable	mentoring **Formal name of WBL** • No formal name/not reported **Country** • UK **Setting** • Not reported **Scale** • Organisational/institutional **Duration and frequency** • Not reported [Info] *Implication that was throughout course - though no specifics reported* **Stage of curriculum at which WBL was offered** • First year of study • Second year of study • Third year of study		**What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Reported [Info] *Transcripts were entered into QSR NVivo v7*
Ibrahim (2006)	**Students of which health professions?** • Medicine **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *138 students: 129 sat both pre and post tests*	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • Scotland **Setting** • Ambulatory/outpatients	**Student learning impacts** • Student knowledge	**What methods were used to collect data?** • Clinical test **What types of data are reported in the study findings?** • Only quantitative **What methods were used to analyse the data?** • Reported

	Number of other participants • Not applicable	**Scale** • Organisational/institutional **Duration and frequency** • Reported [Info] *two weeks* **Stage of curriculum at which WBL was offered** • Fourth year of study		[Info] *Data were analysed using Student's t-test and a mixed random effects model procedure in SPSS*
Jamjoom (2009)	**Students of which health professions?** • Medicine **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *77* **Number of other participants** • Not applicable	**Type of workplace-based learning** • Clerkship **Formal name of WBL** • No formal name/not reported **Country** • England **Setting** • Hospitals/acute care **Scale** • Organisational/institutional **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Fourth year of study • Final year of study	**Views** • Student	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student **What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Reported
Jokelainen (2011)	**Students of which health professions?**	**Type of workplace-based learning**	**Views** • Educator	**What methods were used to collect data?**

	• Nursing **Was the study inter-professional?** • No **Number of student participants** • Not applicable **Number of other participants** • Reported [Info] *Participants were mentors of nursing students 22 from Finland and 17 from UK.*	• Supervision/professional mentoring **Formal name of WBL** • No formal name/not reported **Country** • UK **Setting** • Hospitals/acute care • Ambulatory/outpatients • Community setting **Scale** • Organisational/institutional **Duration and frequency** • Not reported • Reported **Stage of curriculum at which WBL was offered** • Not reported [Info] *building organisational capacity to support mentoring*		• Focus group interview **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Reported [Info] *The data on the mentors' conceptions were framed and analysed using a phenomenographic approach, where the focus was on second-order perspectives. 23, 24 T*
Jowett (2007)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *131*	**Type of workplace-based learning** • Supervision/professional mentoring **Formal name of WBL** • No formal name/not reported **Country** • UK	**Views** • Student • Educator	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student • Questionnaire/survey instrument completed by supervisor/mentor etc • Focus group interview **What types of data are**

	Number of other participants • Reported [Info] *Practice Educators = 24 Mentors = 97*	**Setting** • Not reported **Scale** • Regional **Duration and frequency** • Not reported		**reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Reported [Info] *Univariate analysis using SPSS was used for the questionnaires and data from focus groups were thematically analysed*
Kell (2007)	**Students of which health professions?** • Physiotherapists **Was the study inter-professional?** • No **Number of student participants** • Not applicable **Number of other participants** • Reported [Info] *141 placement educators*	**Type of workplace-based learning** • Supervision/professional mentoring **Formal name of WBL** • No formal name/not reported **Country** • Wales **Setting** • Hospitals/acute care • Community setting • General practice/family medicine **Scale** • Regional **Duration and frequency** • Not reported [Info] *4-week placements*	**Views** • Educator	**What methods were used to collect data?** • Questionnaire/survey instrument completed by supervisor/mentor, etc. **What types of data are reported in the study findings?** • Only quantitative **What methods were used to analyse the data?** • Reported [Info] *statistical analysis; statistical differences in inventory scores explored using ANOVA*

		Stage of curriculum at which WBL was offered • Not reported		
Kell (2009)	**Students of which health professions?** • Physiotherapists **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *51 second year students 39 third year students* **Number of other participants** • Not applicable	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • UK **Setting** • Hospitals/acute care • Ambulatory/outpatients • Aged care • Community setting • Mental health **Scale** • Not reported **Duration and frequency** • Reported [Info] *four 4-week blocks during both Years 2 and 3* **Stage of curriculum at which WBL was offered** • Second year of study • Third year of study	**Views** • Student	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student **What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Reported [Info] *The data from the ASSIST inventory were processed, and the respondents' summed scores for deep, strategic and surface (and its 'Fear of Failure' subset) APL (approaches to learning) were calculated. where numbers permitted, variable relationships were explored first using a Pearson Correlation coefficient and then, if a significant relationship (either positive or negative) was identified (Field, 2005), variable*

				relationships were explored further using an analysis of variance (ANOVA) or t-test as appropriate
Kenward (2009)	**Students of which health professions?** • Nursing • Occupational therapists • Physiotherapists • Other **Was the study inter-professional?** • Yes: inter-professional **Number of student participants** • Reported [Info] *7* **Number of other participants** • Reported [Info] *seven educators/mentors from physiotherapy, occupational therapy, nursing and social work*	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • Not reported **Setting** • Not reported **Scale** • Organisational/institutional **Duration and frequency** • Reported **Stage of curriculum at which WBL was offered** • Not reported	**Views** • Student • Educator	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student • Questionnaire/survey instrument completed by supervisor/mentor etc **What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Not reported [Info] *Very little methods/analysis detail*
Kenyon (2008)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants**	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • England	**Views** • Educator	**What methods were used to collect data?** • One-to-one interview (face-to-face, telephone) **What types of data are reported in the study findings?** • Only qualitative

	• Not applicable **Number of other participants** • Reported [Info] *28 staff (16 health visitors and 12 community nurses) took part*	**Setting** • Community setting **Scale** • Organisational/institutional **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Not reported		**What methods were used to analyse the data?** • Reported [Info] *Themes identified through an inductive approach*
Kilcullen (2007)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *29* **Number of other participants** • Not applicable	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported [Info] *clinical learning* **Country** • UK **Setting** • Not reported **Scale** • Not reported **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Third year of study	**Views** • Student	**What methods were used to collect data?** • Focus group interview **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Reported [Info] *Content analysis, open coding.*

Kneafsey (2007)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *432 students - 75% response rate* **Number of other participants** • Not applicable	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • Not reported **Setting** • Not reported **Scale** • Not reported **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • First year of study • Second year of study • Third year of study	**Views** • Student	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student **What types of data are reported in the study findings?** • Only quantitative **What methods were used to analyse the data?** • Reported [Info] *Data analysed in SPSS for statistical analysis*
Kroll (2009)	**Students of which health professions?** • Midwifery **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *32 student midwives - focus groups 17 - reflective diaries.*	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • Not reported **Setting** • Hospitals/acute care	**Views** • Student • Educator	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student • Self-completion report or diary • One-to-one interview (face-to-face, telephone) • Focus group interview **What types of data are reported in the study**

	Number of other participants • Reported [Info] *Others working on the ward: midwives and nurses, maternity care assistants. 5 senior midwives interviewed 9 midwives and nurses completed questionnaires 7 maternity care assistants - focus groups*	**Scale** • Organisational/institutional **Duration and frequency** • Reported [Info] *A variety of shift patterns - majority long days. Some had short allocations of 2-3 weeks.* **Stage of curriculum at which WBL was offered** • Not reported		**findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Reported [Info] *Thematic analysis of interview and focus group data using NVivo. Categories and themes identified. Diaries and questionnaires analysed using SPSS for descriptive statistics*
Lennon (2004)	**Students of which health professions?** • Dentistry **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *6* **Number of other participants** • Reported [Info] *practice principals (2), patients (45) and health authorities (1)*	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • England **Setting** • Dental and oral health **Scale** • Regional **Duration and frequency** • Reported [Info] *1 day/week for 11 weeks* **Stage of curriculum at which WBL was offered**	**Views** • Student • Educator • Patient	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student • Questionnaire/survey instrument completed by supervisor/mentor etc • Self-completion report or diary • One-to-one interview (face-to-face, telephone) **What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Reported

		• Final year of study		[Info] *six point likert scale collapsed into 3 – low, moderate and high impact.*
Levett-Jones (2008)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *362 altogether and UK students 141* **Number of other participants** • Not applicable	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • UK **Setting** • Hospitals/acute care • Aged care • Community setting • Mental health **Scale** • Regional **Duration and frequency** • Reported [Info] *They undertake a minimum of 2300 clinical placement hours with the NMC (UK Nursing and Midwifery Council 2002) and the European Union Directives (European Union Directive 77/453/EEC 1977; European Union Directive 77/452/EEC 1977) prescribing the amount and type of experiences that students must have to be eligible for registration. Students from site*	**Views** • Student	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student • One-to-one interview (face-to-face, telephone) **What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Reported [Info] *The quantitative data were subjected to descriptive and inferential statistical analysis using Statistical Package for the Social Sciences (SPSS) The interview transcripts were thematically analysed. Emerging themes were identified, categorised and verified by two independent researchers.*

		3 typically had placements of four to twelve weeks duration, at five days each week, across a broad range of geographical areas and facilities, with half of the placement hours undertaken in the students' final year. **Stage of curriculum at which WBL was offered** • Third year of study		
Levett-Jones (2009)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *6 UK students, 11 Australian, 1 Korean* **Number of other participants** • Not applicable	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • UK **Setting** • Hospitals/acute care • Aged care • Community setting **Scale** • Organisational/institutional **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Third year of study	**Views** • Student	**What methods were used to collect data?** • One-to-one interview (face-to-face, telephone) **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Reported [Info] *Thematic analysis.*

Lewin (2007)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *1978 study - 71 completed course. 1065 interviews generated.* **Number of other participants** • Not applicable	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • England **Setting** • Hospitals/acute care **Scale** • Regional **Duration and frequency** • Reported [Info] *1978 study - Each student finished 15 clinical placements - was interviewed and completed questionnaire after each one*	**Views** • Student	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student • One-to-one interview (face-to-face, telephone) **What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Reported [Info] *Data analysed in SPSS generating descriptive statistics. Content analysed into five broad categories*
Lucas (2005)	**Students of which health professions?** • Medicine **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *49* **Number of other participants** • Not applicable	**Type of workplace-based learning** • Clerkship **Formal name of WBL** • No formal name/not reported **Country** • England **Setting** • General practice/family medicine	**Views** • Student	**What methods were used to collect data?** • Focus group interview **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Reported

		Scale • Organisational/institutional **Duration and frequency** • Reported [Info] *1 x 4 week placement* **Stage of curriculum at which WBL was offered** • Final year of study		
Lynch (2010)	**Students of which health professions?** • Dentistry **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *Completed responses for both the initial and final confidence levels were received and matched for forty-seven students (response rate = 85%).* **Number of other participants** • Not applicable	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • Wales **Setting** • Dental and oral health **Scale** • Organisational/institutional **Duration and frequency** • Reported [Info] *for a one-year period beginning in the last two months of their fourth year of studies and extending throughout their fifth year of studies they spend approximately one day a week (a total of twenty-eight days of operating experience) at the*	**Views** • Student	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student **What types of data are reported in the study findings?** • Only quantitative **What methods were used to analyse the data?** • Reported [Info] *Data analysed in SPSS*

		unit treating patients in a primary dental care setting **Stage of curriculum at which WBL was offered** • Fourth year of study		
Lynch (2010)	**Students of which health professions?** • Dentistry **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *257* **Number of other participants** • Not applicable	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • Wales **Setting** • Dental and oral health **Scale** • Organisational/institutional **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Final year of study	**Views** • Student	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Reported [Info] *Grouped together most common 'likes' and 'dislikes' of students. These reported for three different time periods of data collection.*
Lynch (2011)	**Students of which health professions?** • Dentistry **Was the study inter-professional?** • No	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country**	**Views** • Student	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student **What types of data are reported in the study**

	Number of student participants • Reported [Info] *16 of 18 current students;* **Number of other participants** • Reported [Info] *5 of 16 dentists from class of 2004 and 9 of 17 dentists from class of 2007*	• Wales **Setting** • Dental and oral health **Scale** • Organisational/institutional **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Second year of study [Info] *dental therapist and dental hygiene class*		**findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Reported [Info] *Data entered into an electronic database. Descriptive statistics calculated.*

Study	Study participants	Workplace-based learning	The findings tell us about …	Study methods
Macdonald (2005)	**Students of which health professions?** • Medicine **Was the study inter-professional?** • No **Number of student participants** • Not applicable **Number of other participants** • Reported [Info] *68 staff involved actively in undergraduate medical student teaching in Northampton General*	**Type of workplace-based learning** • Supervision/professional mentoring **Formal name of WBL** • No formal name/not reported **Country** • England **Setting** • Hospitals/acute care **Scale** • Organisational/institutional	**Views** • Educator	**What methods were used to collect data?** • Questionnaire/survey instrument completed by supervisor/mentor etc **What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Not reported

	Hospital: 39 consultants, 16 experienced junior doctors and 13 ward sisters.	**Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Not reported		
Macluskey (2009)	**Students of which health professions?** • Dentistry **Was the study inter-professional?** • No **Number of student participants** • Not applicable **Number of other participants** • Reported [Info] *13 respondents - questionnaires In total 11 attended the meeting (focus group). 60 at open forum session*	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • UK **Setting** • Dental and oral health **Scale** • National **Duration and frequency** • Reported **Stage of curriculum at which WBL was offered** • Third year of study • Fourth year of study • Final year of study	**Views** • Educator	**What methods were used to collect data?** • Questionnaire/survey instrument completed by supervisor/mentor, etc. **What types of data are reported in the study findings?** • Only quantitative **What methods were used to analyse the data?** • Not reported
Mailer (2006)	**Students of which health professions?** • Nursing • Midwifery • Occupational therapists	**Type of workplace-based learning** • General/no formal type **Formal name of WBL**	**Views** • Student • Educator	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student

	• Physiotherapists • Radiographers **Was the study inter-professional?** • Yes: inter-professional **Number of student participants** • Reported [Info] *444 students,* **Number of other participants** • Reported [Info] *5 practice placement facilitators*	• No formal name/not reported **Country** • UK **Setting** • Hospitals/acute care • Community setting • Mental health **Scale** • Organisational/institutional **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Not reported [Info] *second and third year students in evaluation - but WBL offered throughout training*		• One-to-one interview (face-to-face, telephone) **What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Not reported
Mallik (2011)	**Students of which health professions?** • Midwifery **Was the study inter-professional?** • No **Number of student participants** • Not applicable **Number of other participants** • Reported [Info] *survey - 51 lead midwifes*	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • UK **Setting** • Not reported **Scale**	**Views** • Educator	**What methods were used to collect data?** • Questionnaire/survey instrument completed by supervisor/mentor, etc. • Self-completion report or diary • One-to-one interview (face-to-face, telephone) • Focus group interview **What types of data are reported in the study findings?**

	for education; 228 midwife teachers (MT) interviews 6 of each of above focus groups 37 MT Diary - 37 MT	• National **Duration and frequency** • Reported [Info] *reported but not in detail - i.e. states that in half of universities WBL in excess of the 50-59% of course time expected* **Stage of curriculum at which WBL was offered** • Not reported [Info] *whole of training*		• Both qualitative and quantitative **What methods were used to analyse the data?** • Reported
Marshall (2012)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *31 started the programme; 24 of them finished the community placements; 68% completed the final questionnaire* **Number of other participants** • Not applicable	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • UK **Setting** • Hospitals/acute care • Community setting **Scale** • Organisational/institutional **Duration and frequency** • Reported [Info] *A variety of placements of 5 weeks each and 10 weeks specialty services. A 'traditional' final placement*	**Views** • Student	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student • Focus group interview **What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Reported [Info] *Quantitative - calculation of basic frequencies and percentage distributions. Qualitative - framework analysis, where any common themes, patterns*

		with either a district nurse or practice nurse **Stage of curriculum at which WBL was offered** • Final year of study		*and key trends identified.*
Martin (2004)	**Students of which health professions?** • Occupational therapists **Was the study inter-professional?** • No **Number of student participants** • Not reported **Number of other participants** • Reported [Info] *6 occupational therapist practice educators; managers*	**Type of workplace-based learning** • Peer mentoring • Supervision/professional mentoring **Formal name of WBL** • No formal name/not reported **Country** • England **Setting** • Hospitals/acute care • Community Setting • Mental health **Scale** • Regional **Duration and frequency** • Reported [Info] *6 placements all 8 weeks long* **Stage of curriculum at which WBL was offered** • Not reported	**Views** • Student • Educator	**What methods were used to collect data?** • One-to-one interview (face-to-face, telephone) • Focus group interview **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Reported [Info] *Transcripts coded and analysed thematically using NVivo. A random sample of transcripts sent to students and educators to check for accuracy.*

Martin (2011)	**Students of which health professions?** • Dentistry **Was the study inter-professional?** • No **Number of student participants** • Not reported [Info] *no student participants* **Number of other participants** • Reported [Info] *One hundred and eighty-eight*	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • UK • Northern Ireland **Setting** • Dental and oral health **Scale** • National **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Not reported [Info] *Whole training*	**Views** • Educator	**What methods were used to collect data?** • Questionnaire/survey instrument completed by supervisor/mentor, etc. **What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Reported
Matheson (2010)	**Students of which health professions?** • Medicine **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *76* **Number of other participants**	**Type of workplace-based learning** • Clerkship **Formal name of WBL** • No formal name/not reported **Country** • England **Setting** • Hospitals/acute care	**Views** • Student	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student **What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used**

	• Not applicable	**Scale** • Organisational/institutional **Duration and frequency** • Reported [Info] *1 x 4 week period* **Stage of curriculum at which WBL was offered** • Final year of study		**to analyse the data?** • Reported
McCombe (2008)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • Yes: inter-professional **Number of student participants** • Reported [Info] 22 **Number of other participants** • Reported [Info] *7 IPL facilitators 9 operational group steering group 1 children's centre manager*	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • Reported [Info] *Creating inter-professional Learning in Children's Centres. Evaluation of a pilot project.* **Country** • England **Setting** • Community setting **Scale** • Regional **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Not reported	**Views** • Student	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student **What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Not reported [Info] *All data were analysed and reported back to all project participants at workshops at the end of key stages in the project.*

McFadyen (2010)	**Students of which health professions?** • Nursing • Chiropodists/podiatrists • Occupational therapists • Physiotherapists • Radiographers • Other **Was the study inter-professional?** • Yes: inter-professional **Number of student participants** • Reported [Info] *Nursing (NS), Occupational Therapy (OT), Podiatry (PD), Prosthetics and Orthotics (PO), Physiotherapy (PT) and Radiography (RD). The total study sample sizes from these professions were 260 Control Group and 313 Experimental Group representing participation rates of 91% and 98% respectively.* **Number of other participants** • Not applicable	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • Scotland **Setting** • Not reported **Scale** • Organisational/institutional **Duration and frequency** • Reported [Info] *This intervention consisted of two specific elements. Firstly a 20 credit point formal module which ran throughout both semesters of Year 1 and, secondly during subsequent years, Themed Days which occurred once during each semester in each year. The Year 1 module consisted of three hours contact per student per week for 24 weeks with the contact being a keynote lecture followed by staff-facilitated mixed profession seminar discussions.* **Stage of curriculum at which WBL was offered** • First year of study	**Views** • Student **Student learning impacts** • Student attitudes	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student **What types of data are reported in the study findings?** • Only quantitative **What methods were used to analyse the data?** • Reported [Info] *full account of stat anal*

		• Second year of study • Third year of study • Fourth year of study		
McMullan (2006)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *131 first year; 122 third year nursing students* **Number of other participants** • Not applicable	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • UK **Setting** • Not reported **Scale** • Not reported **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • First year of study • Third year of study	**Views** • Student	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student **What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Reported [Info] *For quantitative analysis the statistical package SPSS version 11.5.1 was used. Descriptive and bivariate analyses. Qualitative data analysed for recurrent themes.*

Study	Study participants	Workplace-based learning	The findings tell us about …	Study methods
Mead (2011)	**Students of which health professions?** • Nursing **Was the study inter-professional?**	**Type of workplace-based learning** • Supervision/professional mentoring **Formal name of WBL**	**Views** • Educator	**What methods were used to collect data?** • Questionnaire/survey instrument completed by supervisor/mentor etc

	• No **Number of student participants** • Not applicable **Number of other participants** • Reported [Info] *94 mentors*	• No formal name/not reported **Country** • Wales **Setting** • Not reported **Scale** • Not reported **Duration and frequency** • Not reported		**What types of data are reported in the study findings?** • Only quantitative **What methods were used to analyse the data?** • Reported
Morgan (2012)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *10* **Number of other participants** • Not applicable	**Type of workplace-based learning** • International placement **Formal name of WBL** • No formal name/not reported **Country** • UK **Setting** • Not reported **Scale** • Not reported **Duration and frequency** • Reported [Info] *Placements include either twelve week Erasmus (European (EU) exchange) clinical placements or short worldwide clinical placements. p. 956*	**Views** • Student	**What methods were used to collect data?** • One-to-one interview (face-to-face, telephone) **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Reported [Info] *Banonis' philosophy of data analysis for phenomenological studies*

		Stage of curriculum at which WBL was offered • Second year of study		
Morris (2007)	**Students of which health professions?** • Physiotherapists **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *17* **Number of other participants** • Not applicable	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported [Info] *clinical placement* **Country** • Not reported **Setting** • Not reported **Scale** • Regional **Duration and frequency** • Not reported [Info] *Placements over a 4-year programme of learning reviewed.* **Stage of curriculum at which WBL was offered** • First year of study • Second year of study • Third year of study • Fourth year of study	**Views** • Student	**What methods were used to collect data?** • One-to-one interview (face-to-face, telephone) **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Reported [Info] *Data were analysed using a phenomenographic approach, which identifies variation in the ways in which people experience phenomena*

Moseley (2008)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Not applicable **Number of other participants** • Reported [Info] *86 registered nurse mentors*	**Type of workplace-based learning** • Supervision/professional mentoring **Formal name of WBL** • No formal name/not reported **Country** • Wales **Setting** • Not reported **Scale** • Regional **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Not reported	**Views** • Educator	**What methods were used to collect data?** • Questionnaire/survey instrument completed by supervisor/mentor etc **What types of data are reported in the study findings?** • Only quantitative **What methods were used to analyse the data?** • Reported [Info] *Using SPSS*
Murphy (2012)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *440 usable responses or 444? Table 1* **Number of other participants**	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • Wales **Setting** • Hospitals/acute care • Ambulatory/outpatients • Aged care	**Views** • Student	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student **What types of data are reported in the study findings?** • Only quantitative **What methods were used to analyse the data?** • Reported

	• Not applicable	• Community setting • Mental health **Scale** • Not reported **Duration and frequency** • Reported [Info] *'Students have three placements a year, each of a minimum of seven weeks' p. 171* **Stage of curriculum at which WBL was offered** • Not reported		[Info] *Quant*itative*: mean scores were categorised and a logistic regression model was constructed Qual*itative*: free text comments were subject to thematic analysis*
Murray (2009)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Not applicable **Number of other participants** • Reported [Info] *No student participants. Twenty-nine active nursing student mentors participated*	**Type of workplace-based learning** • Supervision/professional mentoring **Formal name of WBL** • No formal name/not reported **Country** • England **Setting** • Hospitals/acute care • Ambulatory/outpatients • Community setting **Scale** • Regional **Duration and frequency** • Not reported	**Views** • Educator	**What methods were used to collect data?** • Focus group interview **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Reported [Info] *Data analysis occurred in three stages (not in sequence), these being data reduction, data display and drawing and verifying conclusions*

		Stage of curriculum at which WBL was offered • Not reported		
Myall (2008)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *161* **Number of other participants** • Reported [Info] *practice mentors - 127 academics*	**Type of workplace-based learning** • Supervision/professional mentoring **Formal name of WBL** • No formal name/not reported **Country** • England **Setting** • Not reported **Scale** • Regional **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Not reported	**Views** • Student • Educator	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student • Questionnaire/survey instrument completed by supervisor/mentor, etc. **What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Reported [Info] *Quantitative data obtained from both questionnaires were coded and input into Statistical Package for the Social Sciences (SPSS version 14) to produce a descriptive statistical analysis. Qualitative data derived from open-ended questions contained within both the student and mentor questionnaires were analysed inductively and coded and categorised to*

				identify the main themes arising from the findings
Neacsu (2006)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *4* **Number of other participants** • Not applicable	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • England **Setting** • Not reported **Scale** • Organisational/institutional **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • First year of study • Second year of study	**Views** • Student	**What methods were used to collect data?** • One-to-one interview (face-to-face, telephone) **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Reported
O'Carroll (2012)	**Students of which health professions?** • Nursing • Medicine **Was the study inter-professional?** • Yes: inter-professional **Number of student participants** • Reported	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • Reported [Info] *Fife Interprofessional Clinical Skills Model for Education (FICSME).* **Country**	**Views** • Student	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student **What types of data are reported in the study findings?** • Only qualitative

	[Info] *44 students - 20 nursing, 10 medicine, 10 physiotherapy, 4 occupational therapy.* **Number of other participants** • Not applicable	• Scotland **Setting** • Hospitals/acute care • Community Setting • General practice/family medicine **Scale** • Regional **Duration and frequency** • Reported [Info] *Four IPCSE sessions lasting 2-3 hours delivered during practice placements in primary and secondary care settings.* **Stage of curriculum at which WBL was offered** • Not reported		**What methods were used to analyse the data?** • Reported [Info] *Thematic analysis*
O'Driscoll (2010)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *937 surveyed 8 interviewed 3 focus group* **Number of other participants** • Reported	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • England **Setting** • Hospitals/acute care **Scale** • National	**Views** • Student • Educator	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student • One-to-one interview (face-to-face, telephone) • Focus group interview • Observation **What types of data are reported in the study findings?** • Both qualitative and quantitative

	[Info] *55 altogether. The following breaks this down by professional role: Lead nurses: 10 focus group, 4 interview Mentors: 3 focus group, 3 interview Link lecturers: 8 interview Ward managers: 6 focus group, 1 interview Practice development nurses: 11 focus group Deputy director nursing: 2 interview Senior trust nurse practice education: 1 interview Senior trust nurse leadership: 1 interview Practice educators: 2 interview, 3 focus group*	**Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Not reported		**What methods were used to analyse the data?** • Reported [Info] *Interview data analysed by thematic content analysis Survey data analysed using descriptive and inferential statistics*
Pender (2004)	**Students of which health professions?** • Dieticians **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *43* **Number of other participants** • Reported [Info] *Skill performance assessed by 27 dieticians*	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • Scotland **Setting** • Hospitals/acute care **Scale** • Regional **Duration and frequency** • Reported [Info] *Observations were randomly witnessed throughout the period of 31 weeks.*	**Student learning impacts** • Student skills	**What methods were used to collect data?** • Observation **What types of data are reported in the study findings?** • Only quantitative **What methods were used to analyse the data?** • Reported [Info] *Development of skills was tracked for the entire duration of placements using the novel assessment tool. The assessment tool used a visual analogue scale (VAS) as the measuring score. Observers were asked to mark the scale (by using a*

		Stage of curriculum at which WBL was offered • Not reported		*vertical line) at the point which best described skill performance.*
Pollard (2009)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • Yes: inter-professional **Number of student participants** • Reported [Info] *15 students* **Number of other participants** • Reported [Info] *20 - a variety of health and social care professionals working with students in placement settings*	**Type of workplace-based learning** • General/no formal type **Country** • England **Setting** • Hospitals/acute care • Aged care • Community setting • General practice/family medicine **Scale** • Regional **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • First year of study [Info] *students at all stages of their training included* • Second year of study • Third year of study	**Views** • Student • Educator	**What methods were used to collect data?** • One-to-one interview (face-to-face, telephone) • Observation **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Reported [Info] *Observation data and transcribed interview data were analysed thematically for within-case and cross-case analysis (Cresswell 1998, Bryman 2001). Interview transcripts were sent to participants for verification and comment. Duplicate analysis of a selection of transcripts served to establish interresearcher reliability*
Price (2011)	**Students of which health professions?** • Nursing **Was the study inter-**	**Type of workplace-based learning** • General/no formal type **Formal name of WBL**	**Views** • Student	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student

	professional? • No **Number of student participants** • Reported [Info] *389* **Number of other participants** • Not applicable	• No formal name/not reported **Country** • Scotland **Setting** • Not reported **Scale** • Regional **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Not reported		**What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Reported [Info] *This was conducted by Survey Monkey® which gave frequencies and percentages for each question. A transcript of the students' qualitative comments was provided by Survey Monkey®. These were read and re-read and independently coded by two members of the study team*

Study	Study participants	Workplace-based learning	The findings tell us about …	Study methods
Purdie (2008)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *6*	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • UK **Setting** • Ambulatory/outpatients	**Views** • Student	**What methods were used to collect data?** • Self-completion report or diary • Focus group interview **What types of data are reported in the study findings?** • Only qualitative **What methods were used**

	Number of other participants • Not applicable	**Scale** • Organisational/institutional **Duration and frequency** • Reported [Info] *Each trip and hence each placement for the student lasts 10 days with 8 days spent in an adapted hotel* **Stage of curriculum at which WBL was offered** • Third year of study		**to analyse the data?** • Reported [Info] *Analysis followed Franz et al.'s (1996) five stages of analysis which involved listening to the audiotape several times, transcribing, familiarization with the data and selection and grouping of significant statements. To ensure reliability, all three members of the project team independently selected and grouped statements using colour coding. Subsequently these were discussed and common themes identified.*
Rawnson (2009)	**Students of which health professions?** • Midwifery **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *81 responded to caseloading element of questionnaire 16 attended focus groups* **Number of other participants**	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported [Info] *Bournemouth University Midwifery Programme (BUMP) caseloading. Throughout the caseloading experience students are supported by a midwife tutor who links to their clinical area. They are also supervised by a midwife sign-off mentor, who is referred to as the responsible*	**Views** • Student	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student • Focus group interview **What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Not reported

	• Not applicable	*supervising midwife*. **Country** • England **Setting** • Community setting **Scale** • Organisational/institutional **Duration and frequency** • Reported [Info] *a supervised caseload during the final 18 months of their midwifery education* **Stage of curriculum at which WBL was offered** • Second year of study • Third year of study		
Rawnson (2011)	**Students of which health professions?** • Midwifery **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *8* **Number of other participants** • Not applicable	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • England **Setting** • Hospitals/acute care **Scale** • Regional	**Views** • Student	**What methods were used to collect data?** • One-to-one interview (face-to-face, telephone) **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Reported [Info] *Grounded theory approach. Data analysis began with a process of*

		Duration and frequency • Not reported **Stage of curriculum at which WBL was offered** • Final year of study		*open coding, transcripts were examined line by line, and all words or segments of text carrying meaning were given codes. Identified 4 major themes*
Rees,C., (2013)	**Students of which health professions?** • Medicine **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *680 students from 29 of 32 UK medical schools.* **Number of other participants** • Not applicable	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported [Info] *Narratives of professional dilemmas occurring during medical training - usually in clinical practice setting.* **Country** • UK **Setting** • Hospitals/acute care • General practice/family medicine **Scale** • National **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Not reported	**Views** • Student	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Reported [Info] *quantitative thematic and discourse analyses of all narratives and in-depth narrative analysis of one exemplar narrative.*

Robson (2007)	**Students of which health professions?** • Physiotherapists **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *22* **Number of other participants** • Not applicable	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • England **Setting** • Hospitals/acute care • Ambulatory/outpatients • Community setting • Mental health **Scale** • Organisational/institutional **Duration and frequency** • Reported [Info] *12 weeks - split between 2 placements - 1 in year 1 and 1 in year 2 of training* **Stage of curriculum at which WBL was offered** • First year of study • Second year of study	**Views** • Student	**What methods were used to collect data?** • Self-completion report or diary **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Reported [Info] *Data were analysed using thematic content analysis*
Rodd (2010)	**Students of which health professions?** • Dentistry **Was the study inter-professional?** • No	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country**	**Views** • Student	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student **What types of data are reported in the study**

	Number of student participants • Reported [Info] *147* **Number of other participants** • Not applicable	• UK **Setting** • Dental and oral health **Scale** • Regional **Duration and frequency** • Reported [Info] *study involves 3 institutions – each institution has different duration and frequency.* **Stage of curriculum at which WBL was offered** • Third year of study • Fourth year of study • Final year of study		**findings?** • Only quantitative **What methods were used to analyse the data?** • Reported [Info] *spss*
Roxburgh (2012)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Not reported [Info] *Incomplete reporting* **Number of other participants** • Not reported	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • Reported [Info] *Hub and Spoke models of practice learning* **Country** • Scotland **Setting** • Mental health • Not reported **Scale**	**Views** • Student • Educator	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student • Questionnaire/survey instrument completed by supervisor/mentor, etc. • Self-completion report or diary • One-to-one interview (face-to-face, telephone) • Focus group interview **What types of data are reported in the study findings?**

		• Regional **Duration and frequency** • Not reported [Info] *Difficult study to report because method is 3 in-depth case studies with different cohorts/methods, etc. – not the space to report detail on each of the case studies – therefore missing data* **Stage of curriculum at which WBL was offered** • First year of study • Second year of study • Third year of study		• Both qualitative and quantitative **What methods were used to analyse the data?** • Not reported
Rush (2011)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *38 students from 2 cohorts* **Number of other participants** • Reported [Info] *1 lecturer; a diabetes specialist nurse; 8 patients and 2 carers; an IT technician.*	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported [Info] *Clinical Practice Teaching and Learning Observatory* **Country** • England **Setting** • Ambulatory/outpatients **Scale** • Regional **Duration and frequency** • Not reported	**Views** • Student	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student **What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Not reported

		Stage of curriculum at which WBL was offered • Not reported		
Ruston (2011)	**Students of which health professions?** • Paramedics **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *8* **Number of other participants** • Reported [Info] *8 GP trainers*	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • England **Setting** • General practice/family medicine **Scale** • Organisational/institutional **Duration and frequency** • Reported [Info] *1 x 2 month placement* **Stage of curriculum at which WBL was offered** • Not reported	**Views** • Student • Educator	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student • One-to-one interview (face-to-face, telephone) **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Reported [Info] *thematic*

Study	Study participants	Workplace-based learning	The findings tell us about …	Study methods
Scammell (2012)	**Students of which health professions?** • Nursing	**Type of workplace-based learning** • Supervision/professional mentoring	**Views** • Student • Educator	**What methods were used to collect data?** • One-to-one interview (face-to-face, telephone)

	Was the study inter-professional? • No **Number of student participants** • Reported [Info] *23* **Number of other participants** • Reported [Info] *10 internationally recruited nurses, two lecturers and five placement-based staff development nurses*	**Formal name of WBL** • No formal name/not reported **Country** • England **Setting** • Not reported **Scale** • Organisational/institutional **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Not reported		• Focus group interview • Observation **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Reported
Shakespeare (2008)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *9* **Number of other participants** • Reported [Info] *15 mentors*	**Type of workplace-based learning** • Supervision/professional mentoring **Formal name of WBL** • No formal name/not reported **Country** • England **Setting** • Not reported **Scale** • Regional **Duration and frequency**	**Views** • Student • Educator	**What methods were used to collect data?** • One-to-one interview (face-to-face, telephone) • Focus group interview **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Reported

		• Not reported **Stage of curriculum at which WBL was offered** • Not reported		
Smith (2006)	**Students of which health professions?** • Dentistry **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *49* **Number of other participants** • Not applicable	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • England **Setting** • Dental and oral health **Scale** • Organisational/institutional **Duration and frequency** • Reported [Info] *full time for five weeks* **Stage of curriculum at which WBL was offered** • Not reported [Info] *'penultimate year'*	**Views** • Student **Student learning impacts** • Student attitudes • Student skills	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student **What types of data are reported in the study findings?** • Only quantitative **What methods were used to analyse the data?** • Reported
Smith (2009)	**Students of which health professions?** • Dentistry **Was the study inter-professional?** • No	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported	**Student learning impacts** • Student knowledge • Student skills	**What methods were used to collect data?** • Clinical test **What types of data are reported in the study findings?**

	Number of student participants • Reported [Info] *49* **Number of other participants** • Not applicable	**Country** • England **Setting** • Dental and oral health **Scale** • Organisational/institutional **Duration and frequency** • Reported [Info] *1 x 5 week placement* **Stage of curriculum at which WBL was offered** • Not reported		• Only quantitative **What methods were used to analyse the data?** • Reported [Info] *stat tests*
Stevenson (2006)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *2 studies reported in this paper. Study 1 = 78 Study 2 =400* **Number of other participants** • Not applicable	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • UK **Setting** • Not reported **Scale** • Organisational/institutional **Duration and frequency** • Not reported [Info] *some information given but lacks detail*	**Views** • Student	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student • One-to-one interview (face-to-face, telephone) **What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Not reported [Info] *incomplete reporting*

		Stage of curriculum at which WBL was offered • Not reported [Info] *study 1 = whole of training study 2 = one clinical placement in year 2 or 3*		
Sykes (2012)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Not applicable **Number of other participants** • Reported [Info] *9 practice nurses supporting pre-registration students.*	**Type of workplace-based learning** • Supervision/professional mentoring **Formal name of WBL** • No formal name/not reported [Info] *practice placements* **Country** • England **Setting** • General practice/family medicine **Scale** • Regional **Duration and frequency** • Reported [Info] *4-6 week 'hub' placements (3) or 1-2 week 'spoke' placements (2) or a mixture of both (4).* **Stage of curriculum at which WBL was offered** • Second year of study	**Views** • Educator	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student • Questionnaire/survey instrument completed by supervisor/mentor, etc. **What types of data are reported in the study findings?** • Only quantitative **What methods were used to analyse the data?** • Not reported

Taylor (2007)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Not reported **Number of other participants** • Not reported	**Type of workplace-based learning** • Peer mentoring • Supervision/professional mentoring **Formal name of WBL** • No formal name/not reported **Country** • Wales **Setting** • Community setting **Scale** • Regional **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Second year of study	**Views** • Student • Educator	**What methods were used to collect data?** • Self-completion report or diary • One-to-one interview (face-to-face, telephone) **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Not reported
Tee (2009)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *27* **Number of other participants**	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • Not reported **Setting** • Not reported	**Views** • Educator	**What methods were used to collect data?** • One-to-one interview (face-to-face, telephone) **What types of data are reported in the study findings?** • Only quantitative **What methods were used to analyse the data?** • Reported

	• Reported [Info] *student practice learning advisor's (SPLA) = 4*	**Scale** • Organisational/institutional **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Not reported		
Terry (2008)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *184 across three nursing cohorts - 100 of these had encountered their first death on the placement* **Number of other participants** • Not applicable	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • Not reported **Setting** • Hospitals/acute care • Aged care **Scale** • Not reported **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • First year of study	**Views** • Student	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student • Focus group interview **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Reported [Info] *phenomenological approach. Transcripts read by 2 researchers who decided on key themes.*
Vivekananda-Schmidt (2011)	**Students of which health professions?** • Medicine	**Type of workplace-based learning** • General/no formal type	**Views** • Educator	**What methods were used to collect data?** • Questionnaire/survey instrument completed by

	Was the study inter-professional? • No **Number of student participants** • Not applicable **Number of other participants** • Not reported [Info] *Heads of schools, deans, and final-year leads - numbers not clear*	**Formal name of WBL** • No formal name/not reported **Country** • UK **Setting** • Not reported **Scale** • National **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Final year of study		supervisor/mentor etc **What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Not reported
Ward (2012)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *31* **Number of other participants** • Reported [Info] *32*	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • England **Setting** • Hospitals/acute care • Ambulatory/outpatients • Community setting **Scale** • Organisational/institutional **Duration and frequency**	**Views** • Student • Educator	**What methods were used to collect data?** • One-to-one interview (face-to-face, telephone) **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Reported

		• Not reported **Stage of curriculum at which WBL was offered** • Not reported		
Ward (2013)	**Students of which health professions?** • Nursing • Midwifery **Was the study inter-professional?** • Yes: inter-professional **Number of student participants** • Reported [Info] *46* **Number of other participants** • Not applicable	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • Not reported **Setting** • Not reported **Scale** • Not reported **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Not reported	**Views** • Student	**What methods were used to collect data?** • One-to-one interview (face-to-face, telephone) **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Not reported
Wareing (2008)	**Students of which health professions?** • Other **Was the study inter-professional?** • No **Number of student participants**	**Type of workplace-based learning** • Supervision/professional mentoring **Formal name of WBL** • No formal name/not reported **Country**	**Views** • Student	**What methods were used to collect data?** • One-to-one interview (face-to-face, telephone) **What types of data are reported in the study findings?** • Only qualitative

	• Reported [Info] *5* **Number of other participants** • Not applicable	• UK **Setting** • Not reported **Scale** • Organisational/institutional **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Not reported [Info] *throughout course*		**What methods were used to analyse the data?** • Reported
Wareing (2010)	**Students of which health professions?** • Other **Was the study inter-professional?** • No **Number of student participants** • Not reported **Number of other participants** • Reported [Info] *reports data arising from 8 mentors*	**Type of workplace-based learning** • Supervision/professional mentoring **Formal name of WBL** • No formal name/not reported **Country** • Not reported **Setting** • Hospitals/acute care **Scale** • Not reported **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered**	**Views** • Educator	**What methods were used to collect data?** • One-to-one interview (face-to-face, telephone) **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Reported [Info] *Phenomenological analysis of interviews*

		• Not reported		
Wareing (2010)	**Students of which health professions?** • Other **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *11* **Number of other participants** • Not applicable	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • Not reported **Setting** • Not reported **Scale** • Not reported **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Not reported	**Views** • Student	**What methods were used to collect data?** • One-to-one interview (face-to-face, telephone) **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Reported [Info] *hermeneutic phenomenological analysis of interviews*
Webb (2008)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *9* **Number of other participants**	**Type of workplace-based learning** • Supervision/professional mentoring **Formal name of WBL** • No formal name/not reported **Country** • UK **Setting** • Not reported	**Views** • Student • Educator	**What methods were used to collect data?** • One-to-one interview (face-to-face, telephone) • Focus group interview **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?**

	• Reported [Info] *10 experienced mentors and five inexperienced mentors*	**Scale** • Organisational/institutional **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Not reported [Info] *whole training*		• Reported [Info] *analysed thematically*

Study	Study participants	Workplace-based learning	The findings tell us about …	Study methods
Weston (2011)	**Students of which health professions?** • Midwifery **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *5* **Number of other participants** • Not applicable	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • England **Setting** • Not reported **Scale** • Organisational/institutional **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Not reported	**Views** • Student	**What methods were used to collect data?** • Focus group interview **What types of data are reported in the study findings?** • Only qualitative **What methods were used to analyse the data?** • Reported

Williams (2009)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *413* **Number of other participants** • Reported [Info] *forty-eight nursing lecturers*	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • England **Setting** • Not reported **Scale** • Regional **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • First year of study • Second year of study • Third year of study • Fourth year of study	**Views** • Student • Educator	**What methods were used to collect data?** • Questionnaire/survey instrument completed by student • Questionnaire/survey instrument completed by supervisor/mentor, etc. **What types of data are reported in the study findings?** • Only quantitative **What methods were used to analyse the data?** • Reported [Info] *Data were analysed with exploratory factor analysis, varimax rotation of the factor solution, internal consistency analysis, and analysis of variance.*
Williamson (2011)	**Students of which health professions?** • Nursing • Dieticians • Occupational therapists • Paramedics • Physiotherapists • Other **Was the study inter-professional?** • Yes: inter-professional	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • England **Setting** • Not reported	**Views** • Student • Educator	**What methods were used to collect data?** • One-to-one interview (face-to-face, telephone) • Focus group interview **What types of data are reported in the study findings?** • Only qualitative **What methods were used**

	Number of student participants • Reported [Info] *41* **Number of other participants** • Reported [Info] *7 academic leads; 1 practice lead = total 8 staff participants*	**Scale** • Organisational/institutional **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Not reported [Info] *implies whole of training - but not clear*		**to analyse the data?** • Reported [Info] *content analysis*
Willmer (2007)	**Students of which health professions?** • Nursing **Was the study inter-professional?** • No **Number of student participants** • Reported [Info] *6 students interviewed* **Number of other participants** • Reported [Info] *4 mentors interviewed 2 managers interviewed in meeting*	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported [Info] *clinical placement* **Country** • UK **Setting** • Hospitals/acute care **Scale** • Regional **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Not reported	**Views** • Student • Educator	**What methods were used to collect data?** • One-to-one interview (face-to-face, telephone) • Observation **What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Not reported

Wilson (2008)	**Students of which health professions?** • Medicine **Was the study inter-professional?** • No **Number of student participants** • Not applicable **Number of other participants** • Reported [Info] *28 deans and 46 clinical teaching fellows*	**Type of workplace-based learning** • General/no formal type **Formal name of WBL** • No formal name/not reported **Country** • UK **Setting** • Not reported **Scale** • National **Duration and frequency** • Not reported **Stage of curriculum at which WBL was offered** • Not reported	**Views** • Educator	**What methods were used to collect data?** • Questionnaire/survey instrument completed by supervisor/mentor, etc. **What types of data are reported in the study findings?** • Both qualitative and quantitative **What methods were used to analyse the data?** • Not reported

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