Mentoring PE Student Teachers in Wales: Lessons from a Systematic Review of the Literature

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ABSTRACT

This paper systematically reviews the contemporary research literature surrounding physical education (PE) mentors in initial teacher education (ITE). Using the 'Preferred Reporting Items for Systematic Reviews and Meta-Analysis Protocols' (PRISMA-P) methodologies, articles were analysed qualitatively using deductive thematic analysis in relation to content related to three core aspects of PE mentorship: i) terminology, ii) attributes and iii) professional learning. The findings identified variations in the terminology and the expectations associated with the role of the PE mentor. A significant number of research studies identified in the literature search focused on developing mentoring processes through collaboration and co-enquiry approaches. However, the literature review found a lack of explicit reference to the professional learning needs and opportunities for PE mentors. The review has led to six key recommendations, two of which are: i) PE mentors should be selected because they possess appropriate attributes to be effective in the role and, ii) professional learning opportunities should be made available to enable PE mentors to recognise the scope of the role and build their capacity to employ collaborative and enquiry-based approaches to supporting the development of student teachers.

Key words: physical education, mentors, initial teacher education.

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Introduction

At present there are significant changes taking in place in initial teacher education (ITE) in Wales as a result of which the school-based mentor is taking on a more significant role. However, at present there is evidence that this is a variable and underdeveloped role. The systematic review of literature contained within this paper has been undertaken to inform a wider project on mentoring within ITE. Specifically, the review was part of a research study that investigated the professional learning needs of physical education (PE) mentors within ITE in a higher education institution (HEI) in south Wales. The context of the paper was specifically focused on PE mentoring in part because the PE programme in that particular institution has the largest cohort of student teachers in Wales and therefore the largest number of mentors in schools. A further rationale for focusing on PE was that the principal investigator (Bethell) had a practitioner role in PE mentoring in ITE. One of the key questions addressed in the wider project was whether or not there is significant recognition of the distinctive role of mentoring in PE. A systematic review of current PE research literature to identify specific practices that could support the development of professional learning of PE mentors was therefore an appropriate place to begin.

Currently Wales is undergoing a period of significant and widespread educational change. In 2015, Graham Donaldson proposed a new curriculum for schools in his seminal report *Successful Futures* (Donaldson, 2015). This was to be a curriculum that would prepare young people for the demands of the twenty-first century. Donaldson's proposals were accepted in full and in 2017 were incorporated into the Welsh Government's *Education in Wales: Our National Mission* (2017). The new curriculum itself was published in 2019 as 'A guide to curriculum in Wales 2022' (Welsh Government, 2020). The successful implementation of the new curriculum requires several objectives to be achieved, including developing a high quality education profession (Welsh Government, 2017). This in turn has major implications for ITE including the role of the mentor.

The quality of ITE and mentoring provision in Wales and indeed in other countries such as Ireland has also come under considerable political

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scrutiny in recent years. (See, for example, the Republic of Ireland (Sahlberg et al., 2012); Northern Ireland (Sahlberg et al., 2014); and England (Department for Education, 2015).) In Wales, early reports (Tabberer, 2013; Furlong, 2015) were more general in nature , focusing on the inability of ITE to develop professionals who were able to meet the needs of education. However, more recently Estyn's (2018b) thematic report on mentoring was more focused. In it, Estyn referred explicitly to variations in the effectiveness of mentors, citing inconsistency in the professional learning opportunities provided as a significant factor. The focus of this paper on professional learning for mentors is therefore informed by considerable evidence of variable and underdeveloped practice in mentoring in ITE.

Two further policy initiatives are also relevant to the changing context for mentoring in Wales. The first is the adoption of a new set of professional standards for teaching and leadership that span teachers' professional careers (Welsh Government, 2018). A second change is that a new accreditation process has been introduced which requires HEI ITE providers to design programmes in collaboration with partnership schools with a stronger focus on effective mentoring than in the past (Furlong, 2015; Educational Workforce Council (EWC), 2017).

Under the new model of ITE required by the accreditation criteria, the role of the mentor in school is in the future going to be central in Wales. The new accreditation process provides brief guidelines on the roles and responsibilities of mentors within the schools which have not previously existed. Indeed, there is specific reference in the guidelines from EWC (2017) requiring a whole-school approach to mentoring, the use of trained experienced practitioners and access to high quality professional learning programmes. In addition, EWC (2017) now require clarity on how mentors will be selected and supported in the role to ensure effective and consistent mentoring provision. This was further supported by evidence in Estyn's thematic report on mentoring (Estyn, 2018a), showing that more effective mentoring occurs where selection criteria had been applied. As a result of these changes, it is now clearer than ever that developing more effective mentoring underpins the drive for a high quality education profession.

It is in this context that the authors aimed to inform themselves about the current issues in this area. There is uniqueness to teaching PE where there is a significant focus on the practical element necessitating a range of pedagogical styles which may not be used across all subject areas. It was therefore of interest to see if this was reflected in the literature and had an

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impact on the way PE is mentored. By undertaking the review, we were interested in understanding the context of the drivers for change in PE mentoring in ITE and whether or not there is significant recognition of this distinctive role. This in turn we hoped would identify what in the future is needed to support the professional development of PE mentors both in our own institutions and beyond.

Purpose and objectives

The purpose of this systematic review was to collate, analyse and evaluate the definitions, identified skills and qualities, and professional learning needs of PE mentors in ITE, as reflected in contemporary literature (up to 16 August 2019). Consequently, the purpose will be met through the following four objectives:

1. To systematically review the terminology associated with PE mentoring in ITE.
2. To critically characterise the attributes of PE mentors in ITE.
3. To identify the professional learning needs of PE mentors in ITE.
4. To consider whether there is significant recognition of the distinctive role of PE mentors in ITE.
5. To consider the implications for PE ITE mentors in an HEI in Wales.

Methods

The methodology of this literature review was adapted from that of Edwards et al. (2017) which employed the 'Preferred Reporting Items for Systematic Reviews and Meta-Analysis Protocols' (PRISMA-P). The reason for using this approach was to provide a systematic framework aimed at minimising bias in the identification, selection, synthesis and summary of recent research literature (Shamseer et al., 2015).

Information sources and search strategy

In seeking out relevant literature, an electronic search strategy was employed using the following databases: i) Educational Research Complete,

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ii) Scopus, iii) SPORTDiscus and iv) ScienceDirect, last searched 16 August 2019. The databases identified above report on areas that were considered potentially pertinent to the area of interest (education, ITE, physical education, professional development in education and sport) and therefore increased the likelihood that all relevant studies would be identified (Edwards et al., 2017). A Boolean logic combination search strategy was applied to each electronic database in order to provide a consistent and tightly focused search. The terms adopted for each search were: i) 'initial teacher education', ii) 'mentoring' and iii) 'physical education'. Inverted commas were inserted around the terms such as 'physical education' to ensure searches found papers relating to physical education rather than 'physical' and 'education'. Further filters were employed, including 'English', 'peer-reviewed' and 'article', to ensure only these papers would appear in the search results.

Eligibility criteria

The criteria for inclusion in this systematic review were: i) papers with a peer-reviewed, published status, ii) papers published in the last ten years and iii) publications in the English language until the date last searched, i.e. 16 August 2019. In order to address the purpose and objectives of the study the following exclusions were adopted: i) papers that used initial teacher education, physical education or mentoring in the title but made no reference to these aspects in the main body of the text, ii) papers that referred to populations that were neither student teachers or iii) papers where the situation did not refer to 'school experience placements', iv) conference reports and readings and (v) editorials and forewords.

The principal researcher used the evidence-based PRISMA-P checklist and flowchart during the planning, conducting of analysis and reporting of this process (Shamseer et al., 2015). A total of ninety-two articles were identified through the use of the four databases and an additional three papers were retrieved from the reference lists in the identified papers; thus a total of ninety-five papers were recorded at the end of the identification process. As suggested by the PRISMA-P procedures, a total of twenty-one duplicate articles were removed, leaving seventy-four papers for screening. The first phase of screening involved reading the abstracts of all articles; as a result of applying the inclusion and exclusion criteria a further thirty-six articles were removed. The thirty-eight remaining papers were then read

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in full and a final eight papers were excluded for having no direct connection to ITE school-based placements. Therefore, a total of thirty papers were included in the systematic review.

Data extraction and analysis

Thematic coding was used to identify distinct categories from the papers considered eligible from the final screening. Thematic coding is a method used to identify chunks of data that relate to research questions (Li and Seale, 2007). Therefore, the process goes beyond considering purely key words and phrases from the text, but concentrates on describing both implicit and explicit concepts within the data. For the purpose of this review, a two-phase approach was used: initially using a basic coding technique to establish 'connections, commonalities and any overarching orders', followed by thorough and interpretative coding to highlight more specific trends in the papers (Rapley, 2011: 280). This coding procedure allowed for replication and transparency of data synthesis (Wilson, 2009).

Qualitative synthesis using deductive thematic analysis was conducted on the thirty applicable papers as the systematic review was concerned with meaning and semantics and not with quantitative data. Thematic analysis is used frequently as a form of analysis in qualitative research, and includes analytical examination and recording of themes within the data (Rapley, 2011). As suggested by Edwards et al. (2017), it was essential that the principal researcher was familiar with the content of the data through repeated reading of each text. Next, initial codes were generated, namely: i) definitions of mentoring, ii) the skills and qualities of PE mentors and iii) professional learning of PE mentors.

Results

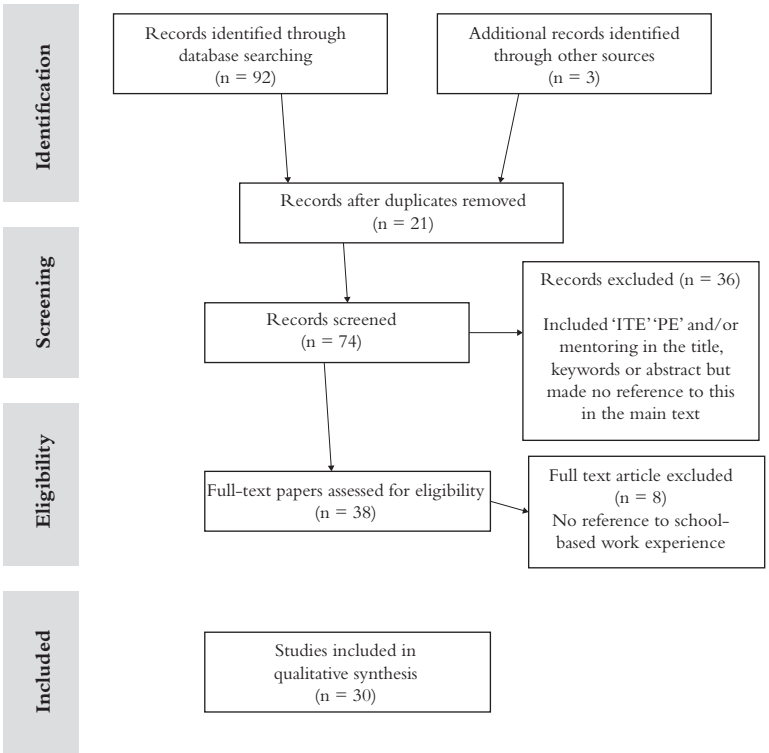
Summary of studies

The number of papers that were identified, screened and considered for eligibility for this systematic review is presented in figure 1.

Table 1 provides an overview of the core categories, higher order and sub-themes used for the analysis of the thirty papers for this systematic review.

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Figure 1. PRISMA-P flow diagram showing the process of study identification and selection (Moher et al, 2009). PRISMA-P preferred reporting for systematic reviews and meta-analysis



Analysis of results

The following section reviews the three higher order themes derived from the research objectives and the subsequent sub-themes that emerged. The higher order themes used for analysis were: i) terminology, ii) attributes of PE mentors and iii) professional learning of PE mentors. These finding are used to make recommendations to develop effective PE mentoring.

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Table 1. Summary of higher order themes, sub-themes and core categories developed as a result of the systematic analysis of literature in this study. The numbers in parenthesis identify the number of outputs identified from the analysis in each core category.

Higher order themes	Sub-themes	Core categories
Terminology	Definition	Specific to ITE (1)
		General to mentoring (14)
	Title for mentor role	Cooperative (9)
		Mentor teacher (10)
		Mentor (8)
		Supervisor (2)
		Assessor (3)
	Eligibility	Use of specific criteria (2)
		Experience (4)
		Willingness (2)
		Suitability (4)
		Exemplary teaching (1)
	Mentoring models	Reference to specific models (3)
		Approaches (8)
		Student voice (1)
	Relational	Communication (9)
		Collaboration (10)
		Support (12)
		Sense of identity (4)
		Learning community (8)

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Attributes of mentors	Contextual	Work place reality (10) Rules of teaching (3) Attendance at training (2)
	Professional	Knowledgeable (16) Role model (10) Risk taking and autonomy (5) Observe and feedback (10) Target setting (1) Systematic assessment (9) Co-enquiry (7)
	Motivation	Professional benefits (8) Personal satisfaction (2) Enhanced retention (2) Barriers (4) Exemplary teaching (1)
Professional development	Need to develop training	Development of partnerships (8) Lack of training (3) Develop existing training (12)
	University provision	Research project (20) Accreditation (3) Development of theoretical models (4) Annual training (3)

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Terminology

For this higher order theme, fifteen sub-themes were identified under the following four core themes: i) definitions of mentoring, ii) titles associated with mentoring roles, iii) mentoring models and iv) eligibility of mentors. Ambrosetti et al. (2014) claim that the differing terminology associated with ITE mentoring is the result of the haphazard way the role has developed. Therefore, a systematic review of the terminology is useful to fully understand the literature.

Definitions of mentoring

The two core themes included were: i) presentation of a working definition (one paper) and ii) reference to aspects of the mentoring role (fourteen papers). Ambrosetti et al. (2014) state that although there is a substantial amount of mentoring literature, there has not been any consensus of agreement on any one definition. Hobson et al. (2009) suggest the reason for this lack of a general definition is that mentoring can, and does, have different purposes and goals at different stages of a mentee's training. However, they provided the only detailed definition derived from a review of international research literature:

> mentoring is defined as the one-to-one support of a novice or less experienced practitioner (mentee) by a more experienced practitioner (mentor), designed primarily to assist the development of the mentee's expertise and to facilitate their induction into the culture of the profession (in this case, teaching) and into the specific local context (here, the school or college). (Hobson et al., 2009: 207)

Fourteen papers referred to elements of mentoring, such as developing the knowledge and expertise in a progressive and systematic way (Nugent and Faucett, 2013; Chambers et al., 2012; Ballinger and Bishop, 2011; da Cunha et al., 2018), and providing guidance and support (Berkley and Conklin, 2016; Kell and Forsberg, 2016; Lofthouse and Thomas, 2017). However, other than that presented by Hobson et al. (2009), a critique of the literature resulted in no explicit reference to a full, working definition of mentoring in the context of ITE. This could be considered problematic because a lack of clarity around the role can lead to different interpretations of the role and responsibilities of mentors.

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Descriptive titles for mentoring roles

The five core categories identified were: i) cooperating teacher (ten papers), ii) mentor (eight papers), iii) mentor teacher (nine papers), iv) supervisor (two papers) and v) assessor (nine papers). The literature suggested that this variation in terminology for mentoring can also be present in the definition of the role (Cartaut and Bertone, 2009; Chambers and Armour, 2011; Escalie and Chalies, 2016). Mentoring roles are often not well defined in the ITE mentoring literature (Ambrosetti et al., 2014) and the interchangeable use of terminology is highlighted in the work of Chambers and Armour, where cooperative teachers (CTs) and mentors are taken to mean the same thing 'CTs (also referred to as mentors)' (2011: 527). Whilst the term 'mentor' is less widely used (six papers), it appears to be consistently employed in Australian, English, French and Canadian literature (Ambrosetti et al., 2014; Jones et al., 2018; Kell and Forsberg, 2016). The additional responsibility to act as an assessor appears to relate in many cases to the terminology used to describe a mentor (Ballinger and Bishop, 2011; Berkley and Conklin, 2016). Where the literature has made it explicit, a 'cooperative teacher' was generally not required to assess, whilst for 'mentors' this tended to be an expectation.

Mentoring models

Three core themes were adopted under the mentoring models, including reference to: i) theoretical models (four papers), ii) approaches to mentoring (eight papers) and iii) student voice (one paper). There was some reference made to existing models of mentoring practice: Levy and Johnson (2012) investigated and adapted a situational supervision model, whilst Young and MacPhail (2016) and Jones et al. (2018) recognised the developmental aspect of training by suggesting that a mentor may employ a 'master/apprentice' model initially and move towards a 'co-enquirer' model. Chambers et al. (2012) created a hybrid model, informed by research resulting in the intersection of five theoretical models to explain factors influencing mentor pedagogy and how they facilitate their mentees learning needs at different stages of development. However, the exploration of the models is generic and does not provide specific details relating to PE content or associated pedagogies that mentors might be facilitating.

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Eligibility

This sub-theme was concerned with identification of the appropriate person for the mentoring role. The following five core themes were: i) experience (four papers), ii) suitability (four papers), iii) use of criteria (two papers), iv) willingness (two papers) and v) exemplary teaching (one paper). Mentoring requires a specific set of skills and for this reason mentors should be 'selected', according to Kell and Forsberg (2016). There appeared variability of practice in this process. At one end of the continuum, strict criteria were reported in Connecticut by Ballinger and Bishop (2011) in order to achieve 'Master teacher' status, which included current pedagogical and subject knowledge, communication skills, conflict resolution and the ability to apply varied teacher-in-training styles. In Norway, Bjuland and Helgevold (2018) reported that to be eligible, mentors need to have passed an accredited course in mentoring. Contrary to this approach is volunteering, although volunteer mentors may not possess the requisite training (Chambers et al., 2012). Experience of teaching featured in the literature, but lacked clarification. Reference to relevant experience and being securely positioned (Jones et al., 2018), exemplary teaching (Richardson, 2011) and work-place experience (da Cunha et al., 2018) were aspects considered to indicate experience of teaching. Quantifying or identifying what constitutes appropriate teaching experience can be problematic; it might be more useful to consider what the roles and responsibilities of a mentor are and then cross-reference these to an individual's capacity to fulfil them, based on their previous teaching experiences.

Attributes of mentors

Exploring what attributes are considered important for effective mentoring determined the next higher order theme. Ambrosetti et al. (2014) consider mentoring to be a complex interplay between various psychosocial and professional elements which the three sub-themes reflect, namely: i) relational (five papers), ii) contextual (four papers) and iii) professional (nine papers). The majority of papers examined made reference to one or more of these core categories.

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Relational

This theme identified various elements that could be either professional or personal in nature and were considered useful in developing the mentor/student teacher relationship. The skill of communicating effectively was mentioned in nine papers. The ability to work professionally in a collaborative or co-enquiry manner featured in ten papers, whilst mentors being able to support student teachers was a significant feature in the literature appearing in twelve papers. Ballinger and Bishop (2011: 31) highlight the importance of these attributes by stating that 'mentors who are astute observers and listeners are able to identify and discuss concerns with student teachers and help them to move forward'. Two further core categories were identified relating to developing student teachers' sense of identity (four papers) and creating learning communities (eight papers). Relational attributes were identified as important for helping to create an environment where student teachers can be guided and supported to develop their teaching abilities, whilst developing in a learning community (Faucette and Nugent, 2012; Young and MacPhail, 2016; da Cunha et al., 2014). Albuquerque et al. (2014) suggest that a supportive developmental process helps to nurture a sense of identity in the student teacher.

Contextual

This sub-theme is concerned with the school setting and the nuances of the profession. Ambrosetti et al. (2014) highlighted that effective mentoring provides explicit instruction into the culture of the school setting and its operation. Three core categories were identified under this sub-theme: i) work place reality (ten papers), ii) rules of teaching (three papers) and iii) willingness to undertake training (two papers). Discovering the realities of the workplace can be challenging for student teachers, therefore helping them to make sense of the environment is an important function of mentoring (Chalies et al., 2008; Albuquerque et al., 2014). PE mentors exploring the rules of teaching are considered necessary to equip student teachers to act appropriately in the PE setting (Escalie and Chalies, 2016). Therefore, a willingness to undertake training to be informed of the contextual needs of student teachers is an important characteristic of a mentor (Ballinger and Bishop, 2011).

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Professional

This sub-theme produced a total of seven core categories. As one of the roles of a mentor is to help prepare student teachers to enter the teaching profession, it is unsurprising that this is the category most widely referred to in the literature. The seven core themes identified were: i) knowledgeable (sixteen papers), ii) role model (ten papers), iii) risk taking and autonomy (five papers), iv) observe and feedback (ten papers), v) target setting (one paper), vi) systematic assessment (nine papers) and vii) co-constructor/co-enquirer (six papers). Sufficient knowledge and experience of teaching and subject specialism was identified by Hobson et al. (2009). A mentor's ability to model effective teaching connects to the 'apprentice model', effectively demonstrating what it looks like, and is considered particularly useful in the early stages of training (da Cunha et al., 2018; Ballinger and Bishop, 2011). Becoming more autonomous and being prepared to take risks are aspects that some mentors will encourage at an appropriate stage in a student teacher's learning (Cartaut and Bertone, 2009; Hobson et al., 2009; Wrench and Paige, 2019). The co-construction core category connects to the last two core categories with the emphasis on both the mentor and the student teacher developing their own practices through collaboration. It features a shift away from more traditional mentoring practice (Lofthouse and Thomas, 2017). Observation and feedback are used to provide information to student teachers on progress and can be formal or informal in nature. Ballinger and Bishop (2011) suggest feedback can decrease with experience as trainees become able to reflect and suggest their own adjustments (Jones et al., 2019). However, the performative aspect of ITE necessitates the grading of student teachers, which continues until teaching standards are evidenced and therefore systematic assessment is necessary (Lofthouse and Thomas, 2017). The final core category was the development of a less traditional hierarchical model of mentoring to a more co-enquiry approach, with learning conversations employed to facilitate this aspect (Chalies et al., 2008; Jones et al., 2018; Wrench and Paige, 2019).

Professional learning of PE mentors

This theme focused on identifying existing provision, potential needs and interventions related to mentors' training and development. The main theme was divided into three sub-themes: i) motivation to be involved

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(four core categories), ii) university provision (three core categories) and iii) need to develop mentoring (four core categories).

Motivation

Within this sub-theme, four core categories were identified: i) professional benefits (eight papers), ii) personal satisfaction (two papers), iii) enhanced retention (two papers) and iv) barriers (four papers). These core categories capture the various reasons why PE teachers choose to become mentors and provides an insight into how this might facilitate their professional learning. Professional benefits was mentioned in eight papers and was the most frequent reason reported. Career progression, enhancing their own teaching practice and involvement in mentor training were some of the benefits identified (Hobson et al., 2009; Chambers et al., 2012; Jones et al., 2019). Kell and Forsberg (2016: 3) report the satisfaction of 'giving back' as a motivator for some becoming a mentor. Retaining teachers in the profession is recognised in the literature, suggesting that the role provides a renewed purpose for some (Hobson et al., 2009). A fourth core category is suggested under the title 'barriers', and relates to increased workloads and lack of funding for mentoring programmes acting as potential deterrents (Hobson et al., 2009; Chambers et al., 2012).

Need to develop mentoring

Recognition that mentoring practice is underdeveloped led to this sub-theme. Three core categories were identified: i) develop existing training (ten papers), ii) the development of partnerships (six papers) and iii) lack of training (three papers). The first category suggests that existing training provision may need to be modified to reflect a more collaborative approach to mentoring. A number of research-based papers explored the adaptation of existing practice with the aim of developing the support provided for student teachers (Bjuland and Helgevold, 2018; Cartaut and Bertone, 2009; Jones et al., 2019; Wrench and Paige, 2019). The second core category highlighted the need to develop more effective means for university and schools to work in partnership. Tannehill (2014: 109) states that in her experience, mentoring in school was 'very much university planned, overseen and controlled'. The final core category connects a lack of training with less effective mentoring (Hobson et al., 2009; Chambers et al., 2012).

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University provision

This category aims to reflect the varied means by which universities (HEI) provide professional learning opportunities for their associated mentors. The following four core categories relate to university involvement: i) research projects (twenty papers), ii) access to accreditation (three papers), iii) development of mentoring frameworks (four papers) and iv) annual training (three papers). The most significant core category across the whole main theme was research, with twenty papers identifying case studies and interventions involving mentors in a school setting. Chalies et al. (2008) report that significant changes in teacher education in France were driving research to inform the development of mentoring practice. A number of papers report that similar reasons influenced their research (Escalie and Chalies, 2016: Bjuland and Helgevold, 2018). Under the core category of accreditation, three papers reported the need or opportunity for accreditation (Richardson, 2011; Ballinger and Bishop, 2011; Bjuland and Helgevold, 2018). The development of mentoring frameworks or approaches was presented in four papers. Amongst others, the use of a mentoring framework to understand the multifaceted role of the mentor is evident in the work of Ambrosetti et al. (2014). The last category identified is that of annual training and was mentioned in three papers. Ballinger and Bishop (2011) suggest that high quality PE mentor provision should involve annual training.

Discussion

The present systematic review of literature in ITE mentoring in PE provides a useful insight into areas of interest in the field in the last ten years. The analysis identified forty-one core categories which were organised into ten sub-themes and three higher order themes. The following discussion will review the higher order themes: i) terminology, ii) attributes and iii) professional learning associated with PE mentors.

Terminology

The analysis revealed that definitions of mentoring were general in nature and rarely related specifically to ITE. References associated with mentoring were largely consistent within the country of origin, implying a

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coordinated national approach, as exemplified in the research studies from France, where the term 'cooperating teacher' was consistently applied (Chalies et al., 2008; Cartaut and Bertone, 2009; Escalie and Chalies, 2016). However, variability in the terminology used to describe the role of the PE mentor in ITE was problematic. For comparative reasons, it would appear desirable to have an agreed title and definition for the role of the PE mentor in ITE. It is suggested that policy makers and researchers need to be explicit and consistent in their use of terminology to enable transparency for all involved in the process. Welsh Government (2017) consistently uses the term 'mentor' in their new accreditation documentation. Nevertheless, in keeping with the review of literature, a nationally accepted definition for the role of mentoring in Wales has not been presented (Estyn, 2018b). As newly accredited ITE partnerships re-design and develop their programmes, consideration of what constitutes the breadth of a mentor's role needs to be explicit.

Attributes

The work of Ambrosetti et al. (2014) provides a useful framework for the analysis of mentor attributes. They identified three aspects that they consider to interlink in effective mentors: relational, developmental and contextual attributes. Being able to communicate, support and collaborate were significant features in the literature. It would be expected that these relational attributes are present when an overall feature of mentoring is to 'nurture' development (Ambrosetti et al., 2014). Yet, this can be problematic as the relational attributes identified are not necessarily those that all teachers possess (Chambers et al., 2012). Chalies et al. (2008) provide a cautionary note, suggesting that emotional support may occur at the expense of more effective reflective practice, potentially hampering development. Therefore, mentors need to recognise when to support and when to challenge student teachers.

Learning to appreciate the school setting and the nuances of the profession is a key feature of effective mentoring (Hobson et al., 2009). Making sense of the environment and exploring the rules applied within specific contexts starts to build student teachers' understanding of the profession. A significant feature of the literature was that PE mentors should be knowledgeable (da Cunha et al., 2018; Ballinger and Bishop, 2011). Interestingly, there is very little explanation in the literature

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reviewed of what constitutes knowledge; the identification of subject-specific content knowledge and pedagogical knowledge are rarely mentioned. Chambers and Armour (2011) report how one PE ITE course in their study expected student teachers to have strong PE pedagogical knowledge and that teaching practice was their opportunity to practice, not learn it. As PE in Wales becomes subsumed in to the health and well-being area of learning and experience, there will be a need to develop PE mentors' knowledge surrounding the experiences, skills and variety of pedagogies that might be appropriate for the new curriculum, and recognition by ITE partnerships that schools are in a state of flux needs to be acknowledged (Welsh Government, 2019).

It is evident in the three theoretical models identified that there is a need for mentors to appreciate the student teacher's stage of learning, which varies depending on the context (Chambers et al., 2012; Levy and Johnson, 2012; Ambrosetti et al., 2014). Young and MacPhail (2016) and Jones et al. (2018) recognise this developmental aspect of professional learning by suggesting that a mentor may employ a 'master/apprentice' model initially and move towards a 'co-enquirer' model. Jones et al. (2018) and Wrench and Paige (2019) investigated how mentors engaging in learning conversations with student teachers can encourage enquiry which is important as they become more autonomous and confident. This supports the work of da Cunha et al. (2018), who found that collaboration with supportive mentors had a significant impact on student teachers' development. The EWC (2017) has proposed approaches that embrace collaborative-, research- and enquiry-based learning that should be considered when designing and developing ITE programmes. Research-informed practice is considered central to the development of all aspects of educational reform in Wales and therefore is identified as an area that requires further research and development.

The ability to effectively assess, provide feedback and set appropriate targets can be an additional function of a mentor. Estyn (2018b) identify 'judgementoring' as a feature of mentoring in Wales, stating that there is an emphasis on grading at the expense of other features of effective mentoring. They conclude that there needs to be a shift away from this being a dominant feature of the role which can lead to the possibility that student teachers learn to 'please', imitating mentors rather than taking risks (Ballinger and Bishop, 2011; Lofthouse and Thomas, 2017). This element of mentoring can be in conflict with the notion of developing student teachers to become more autonomous and to innovate in their practice

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(Cartaut and Bertone, 2009; Hobson et al., 2009; Chambers et al., 2012). Ballinger and Bishop (2011) suggest that a frank and honest conversation by a mentor with a student teacher may be the best course of action to explain this dual role. The introduction of the *Professional teaching standards for teaching and leadership* in Wales (Welsh Government, 2018) uses descriptors to identify a student teacher's profile across five areas of professional practice. It requires student teachers to develop their professional practice across all aspects, not just pedagogy; consequently, this dual-role of mentor/assessor will need to be managed effectively to ensure that student teachers embrace career-long professional learning through innovation, collaboration, professional learning and leadership.

The range of attributes required by effective mentors is clearly extensive (Ambrosetti et al., 2014). Given the impact that an effective mentor can have, selection of appropriate teachers for the role is crucial (Hobson et al., 2009). Chambers et al. (2012) suggest that greater rigour is employed when selecting mentors. This recommendation is reflected in existing practice in Norway where selection criteria are employed, but what is not clear from the research available is whether this is effective (Bjuland and Helgevold, 2018). Estyn (2018b) supports these findings and recommends the use of selection criteria by schools to identify mentors: selection criteria is agreed at ITE partnership level and is part of the accreditation process. Further, a precise definition of the mentor's role is essential to identify what the appropriate selection criteria should be.

Professional learning

A lack of professional learning opportunities has been identified as a contributory factor to ineffective mentoring (Chambers and Armour, 2011; Chalies et al., 2008). A case study by Chambers et al. (2012) investigated the role of PE mentors across three countries and provides an overview of the similarities and differences in existing practice. They concluded that verification of the impact of a system that selects and trains its mentors was necessary, but implied that this approach was the most effective in their initial study. In an attempt to support mentors, Young and MacPhail (2016) proposed the development of support materials, with the mentor role and expectations clearly defined, as well as providing information on the structure of the programme. A limitation of the paper is that it did not verify the impact of the documentation on developing mentor effectiveness.

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French research highlighted a drive to develop mentor expertise as teacher educators were able to employ alternative approaches to student teacher professional learning, specifically in developing a co-enquiry approach to learning (Chalies et al, 2008; Cartaut and Bertone, 2009; Escalie and Chalies, 2016). Professional learning within the ITE sector in France has been driven by national policies attempting to improve the connections between university and school provision, and the approaches employed to train teachers (Escalie and Chalies, 2016). This approach is at present being embraced in Wales with the formation of new working partnerships for ITE, including the Welsh Government's (2018) *Professional standards for teaching and leadership* with an emphasis on professional learning and collaboration and the 'National Approach to Professional Learning' with a focus on mentoring and coaching and enquiry-based research (Champion, 2018).

Limitations

Two specific limitations can be identified within this systematic review: i) only papers published in English were considered, and therefore papers were mainly derived from the UK, Canada, USA and a limited number of European countries, and ii) the eligibility strategy restricting the search to PE will have excluded literature that could have provided a richer understanding of the role of mentors more generally. However, the review does provide a detailed subject-specific perspective of mentoring in PE in ITE during the last ten years.

Conclusions

This paper is the first to provide a systematic review of PE mentoring in ITE, including the terminology, attributes and professional learning associated with the role. To enable greater transparency, a consistent or more thorough explanation of terminology is needed. Being explicit about the nature of the mentoring role within individual ITE programmes was suggested to be an effective condition to ensure consistency of mentoring provision (Young and MacPhail, 2016).

Mentoring is complex and it requires a range of attributes that can be considered both psychosocial and professional in nature (Ambrosetti, et al.,

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2014). The need for an individual to be able to employ a range of attributes can justify the call for selection criteria to ensure that appropriate teachers are appointed to mentoring roles (Chambers et al., 2012). When selecting PE mentors it will be important to define what constitutes 'knowledgeable', particularly with a new curriculum requiring varied subject-specific knowledge and that embraces a range of pedagogical principles (Welsh Government, 2019; EWC, 2017. The provision of mentor professional learning was also identified as necessary to support effective practice (Hobson et al., 2009). No literature source described or investigated what constituted effective professional learning. Rather, professional learning opportunities were inferred in the literature, with involvement in research projects having an impact on approaches used by mentors to support student teachers (Bjuland and Helgevold, 2018).

Estyn (2018b) state that the quality of mentoring is variable and that in too many cases student teachers do not receive mentoring that allows them to make good progress. The development of mentoring is part of Welsh Government's vision of transforming education and now features as part of the accreditation process for the award of ITE programmes and in the 'National Approach to Professional Learning' (Welsh Government, 2017; Champion, 2018). Welsh reform is in line with national policy changes in ITE in other countries and these are identified in the systematic review of literature as drivers for mentor development (Chalies et al., 2008; Bjuland and Helgevold, 2018). There is evidence of a growing focus on developing mentoring practice through collaborative and co-enquiry approaches, to facilitate student teachers' professional learning. For this to be successfully embedded, it will require the selection of mentors with an understanding of their role, with the necessary attributes and who are supported by professional learning opportunities to enable them to develop their practice.

The systematic review of literature revealed PE mentoring in ITE to be an under researched area (Bower and Bonnet, 2009; Young and MacPhail, 2016). It also revealed that what has been researched in the area has focused on the skills of mentoring rather than professional learning into specific content and pedagogical practice associated with PE. The mentoring skills identified appear generic in nature and therefore may be generalised to other subject specialisms. In addition, there were no papers considered in the systematic review from Welsh sources. This is reflected in the findings of Estyn (2018a) that universities in Wales do not develop the research capacities of their ITE departments. Hence, we believe that this systematic review of literature begins to address this deficit.

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Recommendations

Whilst it needs to be acknowledged that the results of this systematic review are based on PE mentoring literature, the generic nature of the findings could mean that the following six recommendations can be applied to other areas of mentoring in ITE. The following recommendations have been used to support the development of mentor professional learning in the HEI where this research was undertaken:

Recommendation 1 – the term 'mentor' is used consistently within ITE programmes, based on Estyn's (2018b) use of this term in their policy documents.

Recommendation 2 – the role of a PE mentor is explicit: to provide professional learning opportunities, to support the student teacher within the school context and to accurately assess against the *Professional standards for teaching and leadership* (Welsh Government, 2018).

Recommendation 3 – PE mentors should be selected based on their ability/potential to effectively undertake the role.

Recommendation 4 – PE mentors are provided with professional learning opportunities that develop their capacity to support student teachers' development through collaborative and enquiry-based teacher educator approaches.

Recommendation 5 – ITE partnerships should develop their research capacity to identify areas of best practice in mentoring for dissemination and to identify the provision of additional professional learning opportunities.

Recommendation 6 – placement of student teachers in partnership schools that embrace the new curriculum for Wales (Welsh Government, 2019), particularly in regard to the health and well-being area of learning.

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