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Integrating theory and practice in physical education: preservice teachers' views on practitioner research

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ABSTRACT

Practitioner enquiry is a well-established approach to professional learning that can facilitate teachers' pedagogical knowledge and improve their educational practice. That said, practitioner enquiry is less frequently seen in physical education (PE) initial teacher education and in the general practice of PE teachers. This study examines the experiences and perceptions of 17 secondary PE preservice teachers (PTs) who completed a small-scale practitioner enquiry as part of their one-year postgraduate initial teacher education programme. A questionnaire and group interviews – conducted before, during, and at the end of the small-scale enquiry – were used to generate data. The findings revealed that the practitioner enquiry promoted greater collaboration between the PTs and their school-based mentors as they worked together to develop their shared understanding of the teaching and learning process. The practitioner enquiry also facilitated the PTs' critical engagement with pedagogical research, enhanced their curricular knowledge and nurtured their independent professional identity.

KEYWORDS

Practitioner enquiry; physical education; preservice teachers; initial teacher education; professional learning

Introduction

Practitioner enquiry is a systematic and investigative approach to professional learning that begins with the teachers' own practice (Hall & Wall, 2019; Menter, Elliott, Hulme, Lewin, & Lowden, 2011). It is a dynamic process that enables teachers to locate their own professional learning within the context of their own classrooms (Gilchrist, 2018). Teachers that undertake practitioner enquiry formalise the reflective process to increase the rigour and transparency of what they do and how it is evaluated. They interrogate the relationship between teaching and pupils' learning and use this, along with insights from wider research, to improve educational practice and contribute to positive change in the lives of pupils (Baumfield, Hall, & Wall, 2012; Hall & Wall, 2019).

Practitioner enquiry is a well-established means of professional learning (Bertling, 2019), but it is less frequently seen in physical education (PE). Furthermore, it is thought to be underdeveloped in PE initial teacher education (ITE) and in the general practice of PE teachers (Goodyear, Casey, & Kirk, 2013). This study examines the perceptions of 17 PE preservice teachers (PTs) and explores their views on the potential value of

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practitioner enquiry as a tool for professional learning within ITE. More specifically, it considers the outcome of a small-scale research project enacted by PE PTs and evaluates its impact on their teaching and their relationships with their school-based colleagues. It also examines how the process of integrating theory and practice informed the PTs' understanding of research and shaped their identity as emerging teacher-researchers (Coleman, Gray, & MacIsaac, 2021).

Practitioner enquiry and professional learning

Practitioner enquiry is a dynamic process that can facilitate the growth of professional knowledge. It helps teachers refine their practice, extend their understanding of their subject discipline and develop a curriculum based on a balance of practice and research (Baumfield et al., 2012; Hall & Wall, 2019). A systematic investigation that includes an evaluation of pupils' learning and insights from wider research can lead teachers to create robust and sustainable ideas that lead to new directions in the teaching and learning process (Hall & Wall, 2019; Menter et al., 2011). Practitioner enquiry can bring change in pedagogy and thinking (Gilchrist, 2018) as it stimulates teacher interest and puts renewed emphasis on professional learning. That said, there are also concerns about the quality and rigour of practitioner research (Gray, 2013). The results are contextual, as the research is situated in one classroom and not transferable to other settings. Moreover, Reeves, Redford, and McQueen (2010) have questioned the objectivity and, therefore, the trustworthiness of the approach, as the results are produced by the practitioner whose views are inevitably influenced by their involvement in the classroom. Finally, there are also more pragmatic barriers to practitioner enquiry; performativity and high stakes summative assessment can constrain opportunities and make teachers more reluctant to engage in the process (Hennessy & Lynch, 2019).

While some settings may be less conducive to research, the practice of PE teachers who make time for practitioner enquiry is thought to be enhanced (Goodyear et al., 2013). Teachers who regularly engage in enquiry and critical reflection are considered to have a more profound awareness and understanding of their pedagogical practice and how they can improve it (Slade, Martin, & Watson, 2020). Indeed, Gilchrist (2018) cites practitioner enquiry as one of the most effective forms of professional development available to practitioners, as adopting an enquiry-based approach enables teachers to locate their own professional learning within the context of their own classrooms. This focus has more relevance than more generic and decontextualised off-site training (Casey, 2013; Darling-Hammond, 2017). For the experienced teacher, engagement in practitioner enquiry can also be regenerative as it promotes disruptive thinking about ingrained habits of practice (Menter et al., 2011). Teachers who willingly engage in enquiry are claimed to demonstrate greater pedagogical awareness of learning and how to support it. This is particularly important as teachers' classroom practice is thought to be the most important contributor to school effectiveness as it closely correlates to pupil progress (Ofsted, 2019).

Practitioner enquiry in initial teacher education

Practitioner enquiry captures the complexity of teaching as it is situated within the classroom and integrates theory with practice. It is seen to be a more appropriate approach to

educational improvement than decontextualised methods that focus on discrete elements of teaching and promote a separation between theory and practice (Kennedy, 2014; Sinnema, Meyer, & Aitken, 2017). According to Gray (2013), the usefulness of educational research is often constrained by a ‘communication gap’ between academic researchers and practising teachers. Addressing this connection is particularly important within ITE as engagement with research is a feature of university learning and an important aspect of professional development for PTs (Tavares de Sousa, Lopes, & Boyd, 2020). The Ofsted (2020) inspection framework for ITE highlights the expectation for PTs to experience a coherent and integrated curriculum. As such, universities and schools should work together to develop the PTs’ theoretical knowledge and provide opportunities for them to apply and refine their learning in practice (Kennedy, 2014). The movement towards the PT researching their practice within the context of their own classroom can help bridge this ‘communication gap’ as engagement in enquiry seemingly enables PTs to develop their theoretical knowledge and enhance their professional practice (Tavares de Sousa et al., 2020).

Wrench and Paige (2020) similarly argue that PTs should engage in enquiry as part of their training as it develops their teaching, extends professional learning, and contributes to improving pupil learning. That said, PTs do experience challenges when attempting to develop expertise as emerging teachers while also undertaking educational research. A culture of performativity in schools can limit the time and freedom of PTs and lead to a degree of dissonance; they value educational research as a means of professional development but are also reluctant to engage in the process (Hennessy & Lynch, 2019). Oliver et al. (2015) also found that PTs were challenged by the process of enquiry but noted that the discomfort ultimately led to greater insights and learning. Developing research skills allows PTs to question and critique their own practice and seemingly encourages a positive attitude to problem-solving rather than a more negative response of ruminating on errors or failings (Baumfield, Hall, Higgins, & Wall, 2010). Practitioner enquiry can provide PTs with the skills that are needed to explore practical challenges and inform future learning and development (Gray, 2013; Hulse & Hulme, 2012). When they engage in such research, PTs produce new knowledge and develop feelings of ownership. Moreover, engaging in practitioner enquiry provides agency to PTs as they develop confidence in an area of their own practice and thus begin to assert their own emerging professional identity (Coleman et al., 2021; Hulse & Hulme, 2012).

Small-Scale practitioner enquiry

The PE PTs in this study undertook the small-scale practitioner enquiry to achieve master’s-level accreditation as part of their one-year postgraduate ITE programme. The practitioner enquiry was introduced to a larger cohort of secondary PTs by a collaborative team of teacher educators. The PE PTs then worked with a subject tutor, the teacher educator who also conducted this study, to gain additional support in designing an appropriate intervention. The practitioner enquiry was included within the ITE curriculum to develop the PTs’ research skills and empower them to engage with theory and explore their own practice – even if this was on a relatively small scale.

The PTs in this study were expected to plan, do, and review their own small-scale enquiry. They were asked to design a pedagogical intervention based on a problem

encountered when teaching the secondary PE curriculum. Baumfield et al. (2012) note that there must be a stimulus for the practitioner enquiry, a positive dissonance that provokes a response and creates opportunities for teacher learning. The small-scale practitioner research was developed from the PTs' existing practice, from an area of their own teaching that stimulated their curiosity and led to them seeking more creative solutions. Practitioner enquiry is not the process of simply implementing the theory of others, as it begins with the teachers' own practice (Hall & Wall, 2019). The pedagogical intervention that the PTs designed in response to this stimulus was refined in consultations with their school-based mentor and university tutor. This created the opportunity for dialogue between the school and university as the PT engaged with pedagogical theory and developed their research proposal.

The practitioner enquiry was not intended to be disruptive as it followed the normal plan-do-review cycle in an efficient and convenient way (Wall & Hall, 2021). It was designed to become an aspect of the PTs' everyday lesson planning and teaching and was managed so that it did not have a detrimental impact on their typical working day. Thus, data were generated from usual classroom practices. The PTs used lesson activities, lesson design materials, reflections on the lesson, feedback from mentors, anonymous images of pupils' work and the usual sorts of lesson evaluation tasks that they asked pupils to complete. As such, the tools for data generation were typical professional practices that had a dual role for teaching and research. They were intended to be manageable, so that they engaged the learner whilst also providing enhanced feedback to promote critical reflection and metacognition (Baumfield et al., 2012).

The PTs were encouraged to share and discuss their evaluations of learning with mentors in the usual way. Teachers are thought to be active and adaptive professionals who accept the importance of reflecting on their own practice (Gilchrist, 2018). When the PTs participated in practitioner enquiry, they engaged in more systematic reflection to investigate themes in their work and enhance their understanding of teaching (Groundwater-Smith & Campbell, 2009). In this way, reflection encouraged the PTs to revisit their own understanding and review the impact of their actions on pupils' learning (Gilchrist, 2018; Slade et al., 2020). Reflections on pupil learning were undertaken collaboratively with other colleagues, as informal discussions with mentors and tutors were thought to strengthen the process (Bertling, 2019; Jones, Tones, & Foulkes, 2018). Thus, new ways of working together were developed to generate additional feedback and suggestions that the PT may have not otherwise considered (Hulme, Cracknell, & Owens, 2009). These interactions were thought to benefit the PTs as the discussions were intended to develop pedagogical understanding, facilitate thinking and improve the PTs' teaching (Goodyear et al., 2013; Gutierrez, 2019).

Methods

This research aimed to analyse the views and experiences of PTs to develop an understanding of the potential value of practitioner enquiry as a tool for professional learning within PE ITE. To this end, a total of 17 secondary PE PTs were recruited to take part in the study during the final phase of their one-year postgraduate teacher education programme. The selection of PTs was based on a purposive sample where potential participants were included or excluded based on their relevance to the purposes of the study

(Denscombe, 2017; Jones, 2015). The PTs were included as they were all training to teach PE as part of the same university ITE partnership in the north-west of England. Seven of the PTs were female, and ten were male, while 13 had previous experience of studying sport science as part of their undergraduate degree. The PTs were well placed to share their experiences and views on practitioner enquiry, as they had all undertaken a small-scale practitioner enquiry as part of their postgraduate teacher education programme. All PE PTs on the ITE programme were invited to participate in the study, and all agreed to do so. This sampling strategy was thought to be a particularly useful means of analysing the impact of practitioner enquiry within PE ITE as it allowed the researcher to develop understanding from the perspectives of the PTs (Bryman, 2015). All participants provided appropriate informed consent, and ethical approval for the study was gained from the University of Chester Faculty of Education and Children's Services Ethics Committee (Reference: 17221PE) on the 17th of February 2021.

The study used questionnaires and focus group interviews with the PTs to generate data and develop an understanding of the potential value of practitioner enquiry as a tool for professional learning within PE ITE. The questionnaire was designed to elicit the PTs' immediate views on the value of the small-scale enquiry and was completed after the PTs had undertaken their participant enquiry in school but before the final submission of their findings. The questionnaire asked the PTs about their experiences of designing, implementing, and reviewing their small-scale enquiry. It also asked about the broader impact of the process on the PTs' own professional learning and their school-based relationships. The questionnaires were easy to administer and allowed the respondents to record their answers in an efficient and timely manner. While the questionnaires offered a convenient means of generating data, the respondents may not have fully understood the questions or replied with sufficient clarity or detail (Denscombe, 2017). As such, focus group interviews with the PTs were also undertaken after they had submitted their findings and again, two months later, at the end of the programme. These interviews were organised in small groups of three or four PTs and were led by the subject tutor. They provided an opportunity for the PTs to reflect on their experiences, correct or confirm their initial responses, and share any new ideas or insights (Jones, 2015). Thus, the focus group interviews revisited the initial responses and also included further questions about the impact of the small-scale enquiry on their understanding of research methods and their identity as emerging teacher-researchers. The focus group interviews allowed the participants to exchange viewpoints and discuss different experiences. They are a well-established means of generating qualitative data and can be used to confirm and add to previous analysis (Bryman, 2015). Revisiting the data in this way enhanced the trustworthiness of the findings and allowed for further insight into the PTs' personal experiences and perceptions (Jones, 2015).

Focus group interviews allow for rich descriptions to emerge, but this does create difficulty in comparing non-standard responses (Bryman, 2015). In this study, the audio recordings of the focus group interviews were transcribed and organised alongside the initial data from the questionnaires. A process of thematic analysis was then used to identify themes in the data. Thematic analysis is commonly used within qualitative research to identify, analyse, and report themes in the data (Braun & Clarke, 2006). It is a flexible approach that can be used to identify patterns of significance and provide a detailed and nuanced account of the data (Braun & Clarke, 2019). Thematic analysis

was used in this study as an appropriate method for analysing the views and experiences of the PTs. First, the data was read and coded to identify relevant features that could be clustered into themes. Next, the themes were revised to identify higher-level patterns and then reviewed to test interpretations and clarify content. Finally, the refined content of the themes was used to write the discussion of findings that follows, with individual PTs being identified by a pseudonym.

Interdependence and collaboration

The PTs invariably referred to their mentor when discussing the practitioner enquiry. The mentor was typically an experienced school-based teacher who guided and supported the PTs' professional learning (Jones et al., 2018). They were inevitably involved in the practitioner enquiry as the study was located in the mentors' classroom (Gilchrist, 2018), the teaching space shared with the PT. Some mentors were more involved than others and contributed to the whole process; 'My mentor was incredibly supportive with the practitioner enquiry and discussed ongoing questions, with myself and the rest of the PE department, to help aid my understanding' (David). The mentors who were more involved in the study were those who were seemingly more concerned by research; 'He was more interested because he likes the theory or academic side of teaching and likes me being curious about finding out and trying to do things better' (Emily). Moreover, the mentors who showed greater interest were also motivated to develop shared understanding. One PT explored the impact of cooperative learning strategies on engagement in health. She noted that 'My mentor was heavily involved in my practitioner enquiry. Our teaching philosophies align really well; therefore, she was very interested in what I wanted to research and wanted to find out too' (Beth). The commitment to developing shared understanding is a feature of dialogic mentoring, where the mentor forms more of a collaborative partnership with the PT to promote enquiry and two-way discussions about pedagogy (Jones, Tones, Foulkes, & Jones, 2021). While most mentors invested in the practitioner enquiry, a small number were resistant to change and expressed less interest in developing shared understanding; 'I tried to discuss the things we'd covered at university, and it was almost dismissed. They were too busy. They had their own way of doing it and they didn't want to change' (Alan). It seems that the performative nature of teaching may have precluded the involvement of some mentors as they were more interested in the PT reproducing existing ideas rather than promoting more creative acts (Hennessy & Lynch, 2019; Jones et al., 2021).

When the mentors engaged more closely with the study, the learning was seen to be mutually productive; 'He helped me design an enquiry that has benefitted my teaching as well as his and the rest of the department' (David). The way participants engage with a practitioner enquiry is thought to be shaped by the context and value attributed to the research (Tavares de Sousa et al., 2020). When mentors valued the process, they were more willing to contribute to the research and use the findings themselves; 'He learnt about the pupils. He has now changed his lesson planning, along with mine, to support aspects that they engage with' (Paul). The realisation that the mentor had also been influenced by their involvement in the study was a particularly rewarding and empowering moment for the PT; 'My mentor stated that she learnt a lot and that really gave me a boost. It made it all feel worthwhile' (Beth). When mentors

demonstrated the willingness to learn from the experiences of their PT it repositioned the PT as an emerging teacher whose contribution to understanding learning was also valued (Jones et al., 2021). For some mentors and PTs, the study provided a focus for dialogue and enquiry that promoted shared learning and nurtured the PTs' professional identity.

The mentors' engagement in the practitioner enquiry also had a positive impact on relationships within the classroom (Baumfield et al., 2012). One PT, who was exploring the influence of reciprocal teaching on inclusion, stated that conducting the study 'helped develop and improve a communication channel between ourselves' (David). This dialogue was largely attributed to the degree of interdependence that developed around the practitioner enquiry as the mentor and the PT were drawn into the research (Bertling, 2019). Some mentors were thought to have 'increased interest and intellectual curiosity' (Paul) in the pedagogical research. In this way, engagement in the research was regenerative for the experienced mentor, as it stimulated their interest and placed renewed emphasis on professional learning (Gilchrist, 2018). While mentors could gain insights and new thinking from the study, the PTs also valued working with them and accessing their resources; 'It was good to discuss ideas and gain more knowledge from an experienced teacher' (Nikki). The PTs valued being part of a community of learners where they were supported and informed by their mentor (Oliver et al., 2015). Overall, the practitioner enquiry promoted interdependence and collaboration. The mentors were interested in the findings of the study and the sharing of any subsequent ideas and resources. At the same time, the PTs valued their mentor's support and recognised their contribution to the successful completion of the project. One PT captured this feeling by saying that 'my mentor's continued support allowed me to complete my enquiry, and it helped our relationship to blossom' (Beth).

Enacting the research

When the PTs were introduced to the study, there was some initial resistance as it came at a time when they already had a significant workload at school; 'I didn't really want to do it, it just seemed to be another task that I was being made to do' (Nell). The performative nature of teaching affected a few PTs as their existing workload made them more reluctant to engage in the practitioner enquiry (Hennessy & Lynch, 2019). That said, most PTs were more optimistic about the possibilities that the study offered; 'I felt really good about completing my research, it made me feel like I had a purpose to be in the classroom' (Miller). Indeed, the most common response was excitement at the thought of genuinely affecting change; 'I was excited and motivated. I felt as if I could really make a difference not just in PE but in the students' education as a whole' (Anne).

The areas of study that the PTs selected for their practitioner enquiry were relevant to the personal challenges that they faced (Heissenberger & Matischek-Jauk, 2020). In the main they came from existing areas of interest, 'I already had an idea in my head, so the planning was fairly straightforward' (Paul), or they related to the PTs' current practice in school, 'differentiation was already a target of mine, it felt a natural progression to research the topic and plan the study around it' (Nikki). The personal relevance of the practitioner enquiry was important as effective professional learning in PE is thought to prioritise the contemporary challenges that teachers face within the context of the classroom (Armour, Quennerstedt, Chambers, & Makopoulou, 2017; Heissenberger &

Matschek-Jauk, 2020). While the PTs typically had their own ideas for the study, they were often refined through ongoing dialogue with others; 'It was easier after discussions with my peers and my mentor' (David). Working with others in this way strengthened the process and generated additional suggestions that may otherwise have been overlooked (Bertling, 2019; Hulme et al., 2009; Jones et al., 2018). However, despite valuing this element of collaboration (Oliver et al., 2015), the PTs retained control over the aims of their study; 'It was good speaking to other teachers, using their ideas and putting my own stamp on it as well' (Ian). The element of control was seemingly important to the PTs as it gave them licence to implement their own thinking; 'It was my thing; I can take what I want from it. I valued that; it was a bit of ownership' (Jane). Engaging in the study promoted collaboration between the PT and other colleagues, but it also provided some agency and helped the PTs to assert their own emerging professional identity (Coleman et al., 2021; Hulse & Hulme, 2012).

Once the idea for the study had been developed, most of the PTs were motivated to engage in further reading; 'It was a very valuable process, as it prompted me to look at different research and see how teachers could improve progress for pupils' (Jill). This was seen to be additional reading around a particular aspect of pedagogy that the PTs would not have otherwise accessed; 'Reading around the subject and investigating the theoretical side was good. It was something you don't normally do because you haven't got time or focus' (Natasha). Participating in the practitioner enquiry tended to stimulate the PTs' interest and prompt them to engage with educational research. As such, it enabled the PTs to develop their theoretical knowledge while also providing an opportunity to apply and refine their learning in practice (Armour et al., 2017; Tavares de Sousa et al., 2020).

The implementation of the PTs' pedagogical idea was generally perceived to be an easier part of the enquiry as it was an extension of existing practice. For example, one PT analysed the effect of worked examples on pupils' written answers in a PE exam class. She explained that it 'was easy to implement into my lesson as it flowed naturally from what we were already doing' (Natasha). The PTs also relied on a wide range of data sources to provide evidential feedback on practice. Generating data was similarly seen to be 'quite easy as it was formalising the things that I was doing anyway' (Josh). The PTs could experience challenges when attempting to undertake educational research, but the practitioner enquiry was not intended to be disruptive (Wall & Hall, 2021). Instead, it was designed to fit with the conventional plan-do-review cycle that was already an established part of the PTs' typical working day.

While the PTs were able to generate data about the impact of their teaching, they were more doubtful about the value of what they had produced. The PE PTs were typically from a sport and exercise sciences background and were accustomed to deductive approaches that used control groups and generated quantitative data. The PTs' previous research experiences seemingly made them more critical about the trustworthiness of their data; 'We come from that sport science background, so you want hard objective evidence. I knew I was getting more interpretive stuff that is subject to bias, so I was taking it with a pinch of salt' (Nikki). The subjective and interpretive nature of the data was commonly noted by the ATs, with another recognising that 'There's also the risk that the findings were skewed by my own biases. I'd read about the impact of the approach, so I think I was probably looking for it in my students' (Anne).

There are concerns about the quality and rigour of practitioner research as the data are produced and interpreted by the practitioner, whose views are inevitably influenced by their involvement in the classroom (Gray, 2013). That said, the PTs were sensitised to this limitation and were able to explain their response; ‘We’d been introduced to the idea of reflexivity and being aware of bias. I think the important thing is that you’re genuinely trying to develop your understanding rather than just trying to make it work’ (Lauren). The practitioner enquiry was introduced and coordinated by university tutors who could share their greater expertise in different types of research (Jones, 2021). Moreover, the ITE curriculum had been designed to include the practitioner enquiry and deliberately provide opportunities for the PTs to develop new reflexive research skills that enhanced their professional practice (Ofsted, 2020; Tavares de Sousa et al., 2020).

Limitations and learning

The subjective nature of the data, along with associated concerns around bias, were seen by the PTs’ to be the study’s main limitations. These concerns, for the quality and trustworthiness of the data, are understandable given the contextual nature of the research (Gray, 2013; Reeves et al., 2010). The PTs were also critical of the limited time scale for their research and recognised the need to ‘extend the study to have a more reliable pool of data’ (Ian). PTs typically noted this issue when asked about the changes they would make to improve their approach; ‘I would want to repeat it over a longer time period. Doing it over four lessons was quite limited in understanding the impact’ (Emily). While PTs were critical about the limited amount of time for their study, their other main reservation was that the research took too long. This somewhat contradictory point was explained by one PT who was reviewing the effect of peer coaching on skill development in a hockey class. She noted that ‘the extra planning and detailed analysis of results takes considerable time, that not all full-time teachers may have’ (Gemma). While most PTs referred to some of the various issues relating to performativity (Hennessey & Lynch, 2019), this did not prevent them from valuing the overall impact of the study; ‘The enquiry is time-consuming and quite demanding. However, I do feel that it has benefitted me as I’ve learnt what techniques work for students’ (Natasha).

The PTs were overwhelmingly positive about the impact of the study as they recognised the favourable effect on pupils’ learning. One PT, who was exploring the impact of weekly review on the recall of teaching points in gymnastics, claimed that ‘the process was valuable, as I could see first-hand the benefits it had for the pupils’ (Alan). The positive impact on pupils’ learning was commonly linked to a broader effect; ‘The practitioner enquiry helped to enhance the school’s curriculum, as it allowed for a new way of learning that helped pupils progress further’ (Natasha). Indeed, when PTs worked more closely with their mentor, they could begin to see the broader implications of their collaboration; ‘It can impact on the whole department and embed change in pedagogy and thinking. Having done the study with my mentor, I would say that it’s a great tool for improving personal and wider school pedagogy’ (Mo). These findings are consistent with those of other studies that similarly found practitioner enquiry research to be relevant for PTs as means of improving pupil learning (Goodyear et al., 2013; Wrench & Paige, 2020). In some cases, the pupils’ responses to changes in

pedagogy stimulated the interest of colleagues (Gilchrist, 2018) and led to wider developments in the professional practice of other teachers (Menter et al., 2011).

While some PTs noted the study's impact on pupils and other teachers in the department, the most commonly noted benefit was its effect on their own learning (Wrench & Paige, 2020). One PT explained that 'it was really good for my practice personally because I could see where I could improve' (Ash), while another noted, 'I feel the enquiry has helped me to explore my own pedagogy and aided my performance' (Jane). The development in personal practice was often linked to the experience of more deliberate reflection and the impact that this had on their understanding of effective teaching; 'The biggest strength is that you develop your understanding in a manageable way. You're informed by reflecting on your own evidence and by research, and that gives you the chance to improve' (Nikki). Finally, the PTs also noted that they had learned more about research techniques through their engagement in the study (Baumfield et al., 2010). One PT noted that 'the study helped develop my understanding of relevant data collection methods, what is valid and reliable, and feasible too' (Paul). This aspect of learning may have the most relevance (Hulse & Hulme, 2012) as many noted that they would now have the confidence to repeat similar studies in the future; 'The study provided a framework that I could use again to understand and improve my teaching. It's been so valuable; it's something I'll take with me and continue to develop throughout my teaching career' (Gemma).

Conclusion

The results from this study indicate that engaging in a practitioner enquiry study can promote the PTs' independence as emerging teachers and their interdependence with their mentors and other colleagues. The PTs developed their understanding of an aspect of pedagogy through their involvement in the study and recognised its impact on their personal practice. They were able to apply and refine their learning in a specific and relevant part of the curriculum and develop a level of expertise that nurtured their professional identity (Armour et al., 2017; Coleman et al., 2021; Tavares de Sousa et al., 2020). In addition, some PTs worked more closely with their mentors as engagement in the research drew them together and promoted greater collaboration and professional dialogue (Bertling, 2019; Jones et al., 2018). When the research was valued, it stimulated interest and helped develop mutually productive reciprocal relationships that centred around shared learning (Gilchrist, 2018; Jones, Tones, & Foulkes, 2019).

That said, there were a few notable limitations associated with the enquiry. In the first instance, a few PTs and mentors were more reluctant to participate in the study. This reluctance was attributed to the performative nature of teaching and the limited time and attention that they could subsequently dedicate to the practitioner enquiry (Hennessey & Lynch, 2019). Effective mentoring practices that help those entering the profession become knowledgeable and skilful teachers should be prioritised as they contribute to the development of a high-quality teaching profession. As such, the mentors' involvement in the small-scale study may need more support so that they have the time and space to collaborate with their PT and contribute to the enquiry in a way that promotes shared understanding. A further issue that shaped the PTs' view of the study was their doubts about the quality and rigour of the data. The PE PTs'

concerns about the interpretative nature of the data were seemingly heightened by their prior experiences in the study of sport and exercise sciences. Thus, the PTs and mentors who share the same research background may need additional training in the use and application of appropriate research methods for the context of the classroom. Moreover, this study highlights the misalignment between the traditional research methods employed in the sport and exercise sciences and those used by physical educators. This may prompt some further scrutiny of the research backgrounds of those applying to learn to teach PE or even some consideration for the design of the undergraduate programmes that historically feed into ITE. That said, while there were some concerns around the nature of the data and some initial reluctance to engage in the study, this did not prevent the PTs from valuing the overall impact of their practitioner enquiry.

The practitioner enquiry had relevance to the PTs as it developed from an area of interest or an existing target that they wanted to explore (Armour et al., 2017). They had the opportunity to refine their thinking through collaboration with others but retained control over the focus of their study. This could be an aspect to develop as guided conversations with peers at university may generate additional suggestions while also helping to develop their methodological understanding (Bertling, 2019; Hulme et al., 2009; Jones et al., 2018). In addition, the practitioner enquiry did bridge the ‘communication gap’ between theory and practice (Gray, 2013). The PTs used their existing practice as the stimulus for the investigation and were motivated to engage with educational research to extend their pedagogical understanding (Hall & Wall, 2019). Engagement in the practitioner enquiry nurtured the growth of the PTs as they were stimulated to develop their theoretical knowledge and enhance their professional practice (Tavares de Sousa et al., 2020). Moreover, the PTs were introduced to research tools that allowed them to explore and develop their own teaching in the short and long term. The practitioner enquiry provided a framework for investigation; it increased PTs’ understanding of research methods and gave them the confidence and motivation to repeat similar studies in the future.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Notes on contributor

Luke Jones is a senior lecturer and subject leader for physical education at the University of Chester. Luke is a member of the Mentoring and Coaching in Education (MACIE) research group, and his research interests are mainly focused on mentoring, coaching, and teacher education within the subject area of physical education.

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