Teacher perceptions of physical literacy informed physical education: the barriers and potential solutions

Abstract

Purpose

Physical literacy (PL) is becoming a key framework for promoting physical activity across sectors globally, particularly in physical education (PE). This research explores how this emerging concept can be operationalised through professional development (PD) and examines teacher perceptions of barriers and solutions to embedding PL in practice.

Method

A twelve-week PD participatory action research intervention was conducted in three UK schools (one primary, two secondary) with primary generalist teachers (n=3) and secondary PE specialists (n=11). Semi-structured interviews captured teacher perceptions before, after, and three months post-intervention. Thematic analysis organised data on barriers and solutions.

Results

Teachers identified barriers in four areas: leadership and governance, management and institutional, individual, and philosophy and values. Solutions focused on raising PE's status and improving PD opportunities.

Discussion/Conclusion

The research highlights the influence of school cultures in developing PL. Effective PD must consider these as well as real-life challenges to achieve lasting impact.

Keywords: Teacher professional development, improving teacher professional development opportunities, operationalising physical literacy, physical literacy and physical education.

Introduction

Physical literacy continues to gain momentum the world over (Shearer et al., 2018). The contemporary notion of physical literacy was re-conceptualised by Margaret Whitehead in 1993 (Whitehead, 2001, 2010). Since then, the concept has grown in acceptance as a credible conceptual framework and theoretical lens to address increasing concerns over levels of physical inactivity (Shearer et al., 2018). The World Health Organization (WHO) has declared that 80% of adolescents and 27% of adults worldwide are not meeting their recommended levels of physical activity (WHO, 2022). The concept of physical literacy has also been used to better articulate the wider, more holistic purpose and intentions of Physical Education (PE) (Durden-Myers & Keegan, 2019). The concept helps to emphasise a shift away from the traditional skills-focused, competitive sport and performative PE model (Jung et al., 2016; Sullivan, 2021), to one that is concerned with meaningful physical activity experiences that promote "the motivation, confidence, physical competence, knowledge and understanding to value and take responsibility for engagement in physical activities for life" (IPLA, 2017). Thus, transforming PE from a subject that traditionally marginalises and discourages many children from engaging in physical activity now and potentially in later life (Jung et al., 2016; Sullivan, 2021) to a subject that is more inclusive and nurturing of all young people's holistic and unique movement potential. Physical literacy informed PE has the potential to increase the value placed upon physical education as it may better serve the needs of young people providing the experiences necessary to promote lifelong engagement in physical activity (Durden-Myers and Bartle, 2023).

Although the concept has been embraced the world over, it has also been interpreted differently across varying contexts, resulting in multiple interpretations of its application in practice (Belton et al., 2022). Shearer et al. (2018) identified well-established national

physical literacy initiatives in the United Kingdom, Canada, United States, New Zealand, and Australia and discovered contrasting definitions and alignments with the philosophical underpinnings of the concept. Whitehead has always maintained that as a dynamic and responsive construct, a variance in interpretation according to the purposes of contexts is to be expected (Whitehead, 2017). However, these discrepancies may lead to confusion regarding related approaches to physical literacy. Shearer et al. (2018) recommend that interpretations must honour physical literacy's holistic conceptualisation of being and living well by simultaneously addressing its three integrated domains of the physical (movement), cognitive (knowledge and understanding) and affective (motivation and confidence) development (Dudley, 2015).

While the concept of physical literacy can serve to ignite interest in engaging in physical activities, simply leveraging the term without a comprehensive understanding of its meaning could ultimately undermine the cause over time (Jurbala, 2015). As a result, the potential to deliver a rich, diverse and responsive curriculum in schools that capitalises on children's inclination towards movement is often neglected. Thus, physical literacy's commitment to "a pathway to a better quality of life" (Jurbala, 2015, p. 368) is fundamental to nurturing every child's potential, not just those who are perceived to be already physically competent, so that they might pursue a fulfilling and active life.

Whitehead, Durden-Myers and Pot (2018) argue that despite its misconceptions, physical literacy can be readily translated into practical application by incorporating experience of progress and success in physical activity across a range of contexts. This should be accompanied by resonant and sufficiently challenging activities, so that self-realisation and a readiness to partake in physical activity might be achieved.

Shearer et al. (2018) report however that when physical literacy is incorporated into PE settings, a dualistic rationale often prevails with development of the physical domain as the sole focus (Shearer et al., 2018). This disconnect between the concept and its enactment in education reflects its conflict with an enduring Westernised pedagogical epistemology that continues to separate mind from body and is concerned with either a dominance of physical skill development or knowledge acquisition through skills-based activities that are universally measurable (Olson et al., 2017; Whitehead, 2010). As such, professional development and support with the operationalisation of physical literacy in practice might be required to enable physical literacy to be enacted with higher levels of fidelity to the concept and its underpinning philosophical values. A physical literacy informed approach to PE delivery may encourage a richer, more diverse and responsive curriculum that aims to nurture meaningful relationship with movement now and throughout life (Durden-Myers, 2020). In recent years, there has been a push to reform PE practices and objectives. Intentional pedagogy focused on enhancing physical literacy could help drive this transformation by simultaneously building students' skills, motivation, confidence and knowledge and understanding to better shape their relationship with movement and physical activity. A physical literacy informed approach would also promote the inclusion of students with diverse needs, fostering their overall growth and development (Houser and Kriellars, 2023). Physical literacy is unique in that it can provide a robust framework for physical education with the goal of promoting lifelong engagement in physical activity. By adopting the key principles for physical literacy informed practice outlined by Durden-Myers, Green and Whitehead (2018) physical education is more likely to provide the foundational experiences that are necessary to develop a positive relationship with movement and physical activity. The seven principles are outlined below:

- Key Principle 1: The Individual. The individual should be at the heart of physical literacy and therefore at the heart of PE pedagogy (Whitehead, 2010).
- Key Principle 2: Promoting Motivation. PE teachers should seek to create learning environments that are autonomy-supportive, and mastery focused. Practitioners should be enthusiastic and encourage all participants to engage in their work and make progress in physical activities.
- Key Principle 3: Confidence. It is essential that participants' confidence in their ability to make progress in an activity is enhanced, through physical education. Achievement, progress and effort should be celebrated in order to build self-esteem.
- Key Principle 4: Physical Competence. The development of physical competence facilitated through meaningful interaction with a range of physical activity environments is essential to encourage effective participation. Learners need time to practice and refine what they are learning, thus providing the opportunity for real progress, for movement patterns to be established and for perceptions of competence to be acquired.
- Key Principle 5: Developing Knowledge and Understanding. Promoting knowledge and understanding is integral to engaging individuals in physical activities.
- Key Principle 6: Devolving Responsibility. By integrating and internalising key skills related to 'taking responsibility', students develop structure and clarity for their lives, values and inner discipline. The ability for students to take responsibility for their participation is essential to establish life-long participation in physical activity.
- Key Principle 7: Using Feedback/Charting Progress as a Motivational Tool. Providing positive feedback based on competence (mastery) was shown to encourage optimal intrinsic motivation from students in relation to their continued engagement in physical activity (Mouratidis et al., 2008). Judgements made should therefore be

autonomous, criterion referenced and ipsative (related to previous judgements) in nature. When possible, students should be involved in co-construction of assessment tasks and criteria, along with self-assessment and presenting evidence of their own learning.

However, for teachers with limited or no background in physical literacy or physical education, developing and evaluating students' physical literacy can be challenging (Stoddart et al., 2021).

There is an ever-growing body of literature within the arena of physical literacy professional development (Edwards et al., 2019; Simpson et al., 2022; Sum et al., 2022; Wright et al., 2020). Most of this research presents the 'beautific narratives' (Quennerstedt et al., 2021) of the positive impact of professional development on PE teachers' understanding of physical literacy (Edwards et al., 2019; Simpson et al., 2022; Sum et al., 2022; Wright et al., 2020). Yet there is a paucity of research (Stoddart and Humbert, 2021 and Harvey and Pill, 2018) that presents the problematic realities for teachers in operationalising physical literacy informed PE through their perceptions of these barriers and their proposed solutions.

Purpose

This research draws upon the findings of a twelve-week physical literacy informed PE professional development programme. The physical literacy professional development programme aimed to bridge theory and practice by offering practical and theoretical recommendations that were philosophically aligned to the concept. This article will focus on the barriers and potential solutions to operationalising physical literacy in PE teaching practice that were unravelled throughout the professional development process. Therefore, this research aims to answer the following research question: 'What are the perceived barriers and solutions to physical literacy informed PE by teachers?'

Methodology

This research is underpinned by a relativist ontology and a constructionist epistemology. We centrally locate the view that the teachers and actors in this study create social phenomena, and their meanings are continually being accomplished by social actors (Berger & Luckmann, 1967; Blaikie, 2007; Sparkes & Smith, 2014). The notion of being a teacher undertaking physical literacy professional development is, therefore, a social construct experienced in a culturally bound and context specific environment with the lived experiences of participants understood through a variety of views and different perspectives. Thus, this study is interactive and co-constructed by the researcher and the researched (Sparkes & Smith, 2014). This research also acknowledges the subjective meaning of social action by embracing interpretivism and the notion of multiple realities (Sparkes & Smith, 2014). Multiple realities are relevant to this study as the researcher and participant teachers are actively involved in constructing their 'reality'.

The research was conducted with primary generalist teachers (n = 3) and secondary PE specialists (n = 11) across three schools within the U.K. over a twelve-week period. Participant pseudonyms were used to protect participant anonymity. Table 1 outlined the participants and their context.

Insert Table 1 here

The intervention, a physical literacy informed PE professional development programme, aimed to enhance teachers understanding and enactment of physical literacy informed practice. Specifically, teachers were also asked to reflect on the barriers, as they perceived them, to the successful implementation of physical literacy informed PE practice. Some teachers were also able to offer solutions to these perceived barriers. The programme aligned with the International Physical Literacy Association's (IPLA) definition, "Physical

literacy can be described as the motivation, confidence, physical competence, knowledge and understanding to value and take responsibility for engagement in physical activities for life*"* (IPLA, 2017). It consisted of a series of collaborative professional development sessions, lesson observations, reflections and mentoring. The researcher designed and delivered the entire professional development programme. At the time of the intervention, she was a PE teacher educator with substantial knowledge in physical literacy and a recognised researcher in the field.

The professional development programme incorporated six, one-hour sessions over a period of 6-12 weeks (depending on disruption/term length). During these sessions, the concept of physical literacy was unpacked, explained and explored developmentally. Teacher participants planned, delivered and reflected on their own physical literacy informed PE lessons in response to their ongoing learning. Each lesson was video recorded, and each lesson reflection was audio recorded. Each participant was observed between 6 and 9 times during the programme. The recordings were critiqued by participants and the researcher to evaluate how the lesson supported or hindered the development of physical literacy. Both the researcher and teacher were involved in the reflection process co-constructing the recommendations for future practice. The researcher was also available as a mentor to guide all participants throughout the entire programme.

The impact of the physical literacy professional development was captured using semi-structured interviews prior to the professional development commencing, immediately after the professional development period and then participants were interviewed again after a period of three months. The opening interview explored participants' perception of their teaching role, the value of PE and potential barriers to nurturing physical literacy within their practice. It was also used as a benchmark to monitor progression of participants' conceptualisation,

understanding and operationalisation of physical literacy during the intervention, as well as their motivations and aspirations for participating in the professional development programme. The closing interview inquired into participants' understanding of physical literacy and how it now informed their practice post intervention. The final interview considered the longer-term impact of the intervention and its sustainable impact.

The barriers were compiled from the opening interview, closing interview and final interview. Solutions were taken from the closing interview and final interview. The semi-structured interviews were audio recorded, transcribed and then analysed using abductive thematic analysis to identify key themes. Here we embraced Denis et al.'s (2001) stance of using a priori themes. Such data analysis is therefore part data inspired, and part theory inspired (Amis, 2006). As we coded and developed categories and themes, we also returned to the literature, theoretical and conceptual ideas.

Our coding was driven by the assumption that "data interpretation and analysis involve making sense out of what people said, looking for patterns, putting together what is said in one place with what is said in another place, and integrating what different people have said" (Patton 1990, p. 347). Coding started as soon as data collection began using "codes" to identify "chunks of text" (Amis, 2006, p. 128) that peaked interest in relation to prior themes or as possible emerging themes. We particularly aligned with notions that whilst data saturation is a goal, in reality "we know our analysis is not finished, only over" (Van Maanen, 1988, p. 120).

This research also adheres to the ethical requirements set out by the British Educational Research Association (BERA) ethical guidelines for educational research (BERA, 2018). Ethical approval was granted by the supervising university. Participant anonymity is preserved by using pseudonyms in the research findings, and participants were able to opt out throughout all stages of the research.

Findings and Discussion

This section presents and discusses the findings from the research of the perceived barriers and solutions of physical literacy informed PE, as identified by the teacher participants. As detailed in the discussion, these perceived barriers all served to hinder or restrict PE's potential to adopt a physical literacy informed approach, whether that be through curriculum design, pedagogical approach or assessment strategies and the freedom to algin them with physical literacy.

These were categorised into four inter-relating areas outlined in Figure 1.

Insert Figure 1 here

- Leadership and governance barriers centred around governmental policies, Ofsted regulations, and national agendas pertaining to education and PE, which may restrict the implementation of a physical literacy informed approach.
- Management and institutional barriers were associated with the issues that arise from individual schools, multi-academy trusts (MATs), or local authorities in their management and organisation of educational institutions and PE which may hinder the implementation of a physical literacy informed approach.
- Individual barriers were those that originated from the perspectives of individuals such as teachers, students, or parents that prevent the individual embracing a physical literacy informed approach.
- Philosophy and value barriers permeated all other categories and included the absence of value or conflicting philosophies acting as a barrier to implementing physical literacy informed PE.

Leadership and Governance Barriers

Government, Ofsted, National, PE and Physical Literacy Agendas

Ofsted and the Government were seen as possible barriers due to the limited value they place on PE, which shapes the educational culture and expectations in schools through the downward pressure and influence they exert. Both primary and secondary teacher participants expressed concerns that PE has an apparent lack of value and is at best reduced to a subject that perpetuates a games-directed, skills-based and sport-techniques focus (Kirk, 2012), with physical literacy absent from any discourse. Stephen stated, "*Ofsted are a clear barrier to physical literacy in PE because they don't value it, and schools end up valuing what Ofsted values because that's the agenda*". In the secondary sector several participants felt that Government targets and pressure determined how they taught PE. As Dave commented, "*Obviously, government level is pushing results; and that's going to drive what we do at school level".* Elevating PE from its relegated position to a subject of equal value within a holistic educational offering remains an ongoing challenge for the PE community, which has a consequential impact on introducing the holistic intentions of physical literacy into the PE curriculum. Two issues arise here, first physical literacy informed practice needs to be further evidenced as a more effective framework to support the development of lifelong participation in movement and physical activity. And second, government organisations and policy makers need to be cognisant of physical literacy and how it can help to reshape and provide the foundations for a more successful physical education experience.

Management and Institutional Barriers

It is clear from the comments in the previous section that there is a requirement for teachers to align their practice with governing organisations such as Ofsted. Perceptions of Government hindrance may be amplified by senior management and school level leadership, depending on their interpretation and prioritisation of policy, Ofsted requirements and the National Curriculum. If constructs like physical literacy are not acknowledged or valued at the governance and accountability level, teachers might be disinclined to embrace a physical literacy informed approach if it doesn't integrate with existing accountability and governance messages. If they do attempt to adopt physical literacy into their practice, then this is likely to leave them feeling vulnerable. Therefore, it was vital to explore enactment at the level of "school-based policy elaboration" (Braun et al., 2010, p. 547) and how this might be affected by institutional culture and ethos.

Management and Institutional Barriers included a number of sub-themes which were categorised into: curriculum, timetabling and student groupings, funding facilities and equipment, and whole department and whole school approach. Each of these sub-themes are explored in more detail below:

Curriculum, Timetabling and Student Groupings

At the school leadership level, there is a tendency to restructure curricula in response to academic performance pressures. Two secondary teacher-participants noted how their schools had removed Core PE from Year 11 so that other academic subjects could be given more attention. Andrew noted *"The school...they don't do PE in Year 11 which is a real shame...*" and Luke remarked:

> *School level, I think... like with Year 11 here, they don't do core PE, because they have more time in other subjects. So that's obviously a barrier. And I know it has been brought up many times, but I don't know how that will change.*

This decision to exclude PE at Key Stage 4 signals a dualistic approach to mind and body by dividing academic achievement and physical activity. This conflicts with the philosophical values of the physical literacy construct - monism, existentialism and phenomenology - that influence its multifaceted approach to wellbeing. Its proponents advocate a recognition of PE's holistic impact on learners (Whitehead, Durden-Myers and Pot, 2018), arguing that prioritising curricular time for academic subjects over PE has no impact on subject grades and may instead have a detrimental effect on health (Trudeau and Shephard, 2008). The prioritisation of academic performance over holistic education may be an unintended consequence of evaluation criteria such as those set by Ofsted, along with accountability measures for academic attainment that then inform all aspects of a school system (Ranson, 2011).

Creating a positive and secure learning environment is crucial to providing enough opportunity "to develop the motivation, confidence, physical competence and knowledge to engage in physical activity for life" (ILPA, 2017). As reported by both primary and secondary teacher-participants, accountability measures affect the entire school PE curriculum, including the activities on offer, regular timetabling of PE, and student groupings. Joe (secondary school teacher) observed, "*the curriculum for next year, I think we're in a better place to [look] at the different activities that we're offering*". With little manoeuvre to adapt these activities, any embedded performance driven approaches that hamper the operationalisation of physical literacy might present belligerent obstacles. Stephen (primary teacher) identified disruption to the scheduling of PE lessons as an issue to a consistent physical literacy approach within PE. He stated, *"roles within the school and timetabling issues have been the main barriers*." The grouping of students into classes, also created a barrier to a consistent effort. As Adam (secondary teacher) stated, "*It was a barrier when we had like different groups all the time. I think that was difficult because you couldn't really develop anything with the kids, you can't really do that within four weeks.*" This is in tension with a physical literacy informed approach, changing groups regularly may hinder the teacher in really understanding the developmental needs of their class and planning appropriate experiences to support their continual educational and physical literacy journey. These decisions are often made at the senior leadership level, thus reflecting the values of the school's subculture in the prioritisation and structure of the curriculum and its delivery. It seems that participating schools had allowed accountability measures to create major shifts in their cultures, changing the dynamics of their organisation (Laughlin, 1991).

Funding, Facilities and Equipment

The availability of funding and facilities significantly impacts the curriculum. Secondary teacher-participants suggested that increased funding could enhance facilities, equipment, and opportunities for initiatives, thereby promoting physical literacy and encouraging student engagement in physical activity. This was emphasised by Andrew who stated, "*The government gives us money; we could do with some more. Now we've got eleven gym mats ... I've got a class of thirty boys that I taught yesterday in threes on one mat each*". Whereas Dave commented on facilities:

> *It will be good to have the Astro Turf which will be another outdoor space, because sometimes I think we're a bit cramped for space. And the basketball courts outside are pretty ropey. So, it's just that environment for learning sometimes. And sometimes you think that environment from minute one is not what you want it to be, just because maybe the resources you've got*.

Insufficient facilities that result in cramped classes are not conducive to an enjoyable PE experience. If physical literacy is the ultimate goal of PE, and PE is the main means to achieve it (Whitehead, 2013), then this hinders its operationalisation. PE in the UK has received significant investment following the legacy of the 2012 Olympic Games (Lindsey, 2020), as well as through Pupil Premium allocation (DfE, 2024). Despite this, the priority of PE has not changed within school structure (Eyre et al., 2022). Schools have increasing autonomy over fund allocation, so these comments raise questions over the amount of funding or how it is distributed. If PE is relegated in the hierarchy of school subjects because of the aforementioned leadership and governance barriers, then its receipt of funding may be reduced, or stuck in the confines of the central budget as schools' finances become ever more pressured.

Whole Department and Whole School Approach

Government policy interpretation by the influential subculture of PE department leadership may also determine student engagement and the promotion of physical literacy. For instance, debates over school sports uniforms versus personal sports attire raise questions about how such decisions align with the broader goal of promoting lifelong physical activity. Lack of consistency in whole-school and department approaches to PE and physical literacy was cited by both primary and secondary school participants. Olivia (primary teacher) stated, "*What they say and what they do needs to be aligned … and like consistent … because obviously we do assemblies about children getting 60 minutes a day but then teachers don't teach PE*". This sentiment was supported by Joe (secondary teacher):

> *I think in terms of a PE department I think it depends what your rationale is and what your aim of your department is, is it to turn out key stage 4 results and the pressures of having that because in terms of your performance management, that's what you're judged on, or is it having active key stage 3 lessons...having an understanding of what the academy actually want or the school wants in terms of developing that in the curriculum*

There's a prevalent misunderstanding that the effectiveness of professional development hinges solely on teachers' willingness to apply the acquired knowledge. Nonetheless, even teachers eager to integrate professional development practices into their classrooms frequently encounter obstacles beyond their control (Buczynski and Hansen, 2010). Ensuring alignment between school culture and its subcultures is crucial for maximising the impact of physical literacy professional development.

These findings highlight that teaching occurs within the context of school cultures and subcultures, rather than in isolation. Senior leadership teams play a significant role in shaping and modifying these cultures. Examining the management and institutional obstacles sheds light on potential issues related to school culture, such as the importance attributed to PE and how it influences the school environment's ability to support physical literacy-informed practices. Teachers noted that schools, in their management and organisation of PE, can either erect or dismantle barriers to effectively implement physical literacy in practice. Physical literacy can help to unify the culture, ethos and vision for physical education across organisations and their sub-cultures. Physical literacy informed physical education can provide a robust framework elevating the importance of holistic, inclusive and personalised experiences that if adopted by school communities can serve as the mechanism through which practices can be challenged and enhanced.

Individual Barriers

There is adequate evidence that engagement between staff, students, family and community is required before, during and after school to increase physical activity opportunities for physical literacy development (Castelli et al., 2014). Teachers, students and parents were all identified as individual sub-cultures who could present barriers to the operationalisation of physical literacy in practice if they did not sufficiently value its importance.

Teacher Barriers

In the initial interview, seven participants (n=2 primary and n=5 secondary teachers) stated that their motivations for participating in the professional development programme were to better understand physical literacy, how it could inform their practice and have guidance on embedding it so that it would improve teaching and learning.

However, the participants identified barriers to its operationalisation such as confidence, competence, lack of professional development, buy-in, accountability, extra-responsibilities, leadership role, capacity, time and stress.

In primary PE settings in particular, participants had heightened awareness of lack of training in PE, which resulted in a lack of confidence in their ability to deliver quality PE lessons. As Amy remarked, "*We have never ever had professional development, and this is why I'm petrified - any PE training, ever. I qualified like 5 years ago, and we had like 2 hours during my PGCE and that's it."* This lack of confidence and training often leads to the outsourcing of PE in primary schools to coaching companies, which reduces the opportunity for teachers to develop and embed their physical literacy knowledge (Williams and Macdonald, 2015).

Buying into the physical literacy concept is also crucial for it to align with a teacher's personal beliefs and values, thereby becoming integrated into their teaching practices. Despite buy-in throughout the professional development programme, not all teacher participants felt able to maintain this level of engagement post-professional development. This was most clearly stated by Andrew (secondary teacher):

> *I feel like I bought into it then, and why haven't I bought into it now? We're not doing it. And that is lack of engagement for us, and I think it comes from buying into it. I think at the start some of us were really like "Yeah, let's do that." And I know other things happened, people have babies and people are off sick, and people change roles in departments and stuff like that; but we haven't mentioned it*.

Without clear commitment or sense of accountability, sustained changes in practice are unlikely to occur. This supports Castelli et al. (2014) who state that the operationalisation of physical literacy should not rest on single individuals and should instead be a whole school commitment. Often sustained lack of engagement results from reduced teacher capacity and time, and increased stress. Teacher workload is well documented as an issue in the profession (Higton et al., 2017) so a school's investment in professional development should be accompanied by the time and space to implement their learning.

Student Barriers

Students were also identified as potential barriers to implementing physical literacy by the participating teachers. Various factors, such as student organisation, lack of engagement, and participation in physical activities, were mentioned. Much of the discussion about student organisation revolved around students having the appropriate kit for their PE lessons. As Amy (primary teacher) stated, "*A lot of our children are reluctant to bring kits in.*" This might allude to a lack of confidence or motivation to engage in PE lessons. Additionally, some students harboured negative perceptions of PE based on past experiences, leading to reluctance to participate actively in lessons. Anne-Marie (secondary teacher) felt that "*it's just maybe the attitude that they come in with. So, if they've hated it in primary school, it's hard to change them but think if we get them on side in PE then that will come around more*". Furthermore, a decrease in students' physical activity levels outside of PE lessons was observed compared to previous years or generations. A lack of engagement in sports and physical activities outside of school has ripple effects on participation in extracurricular, curricular, and broader physical activity opportunities. This prompts the question: could physical literacy help to reshape PE experiences so that they are more meaningful for young people, helping to increase participation in physical activity both within and beyond educational settings?

Parent Barriers

Participants felt that parents play a crucial role in fostering engagement in sports and physical activities outside of school and serving as role models for active lifestyles. Participants noted that parents frequently readily excused their children from PE lessons.

> *I have notes off mum every week saying they've got a bad ankle.... like I said, you can guarantee who you're going to get a note off on a Friday morning, from parents. Same parents, same injury, every single week.* (Amy, primary teacher)

There is a growing recognition of the importance of parental support in empowering schools, subject communities, and individual teachers, particularly in PE (McDavid et al. 2012). As Luke (secondary teacher) affirmed:

> *I think obviously parents have a massive influence on what their pupils do, and also the kind of...the outlook and what they think can have a massive influence. You know, if their parents didn't like PE and sport then that could possibly have an impact.*

This is especially relevant given the expansion of the subject into after-school programmes and the opportunities for physical activity at home and with parents and families.

Philosophy and Value Barriers

The promotion of physical literacy and lifelong engagement in physical activity is problematic in a culture that marginalises and devalues PE at multiple levels, including governance and leadership, management and institutional, and individual levels across contexts. Within contexts, "*mixed messages from the school*" (Joe, secondary teacher) resulted in teacher confusion over their pedagogical rationale. As Amy (primary teacher) stated, "*When Ofsted come in, they don't come in and say, 'let's look at your PE lessons*'. *They come in and say 'What are your literacy levels, what are your numeracy levels? Let's look at your books'.*" Amy's statement substantiates concerns that a focus on numeracy and literacy in primary school settings is impacting fundamental aspects of PE, consequently affecting the promotion of physical literacy and lifelong engagement in physical activity, health, and well-being (Green, 2005).

At GCSE level, there was excessive emphasis placed on exam performance rather than developing physical literacy. The necessity to match pedagogy to dominant ideology (Lawson, 1993) can lead to didactic teaching (Casey and O'Donovan, 2015), which is incompatible with the meaningful experiences advocated by physical literacy. Despite this, many teachers felt that gaining an understanding of physical literacy had revitalised their approach to teaching PE and allowed them to re-establish their initial motivations for entering the profession. This was best expressed by Dave (secondary teacher) who asserted, "*it's almost given me a bit of confidence and actually when it comes to physical literacy, I think it's the aim of why I became a PE teacher*."

The physical literacy professional development enabled teachers to critically reflect upon their own education philosophy and explore the utility of physical literacy in reframing their practice for more harmonious alignment. Often within any career your practice and values may incrementally creep away from your professional values and beliefs. Engaging in physical literacy professional development enabled teachers to reconnect with the value and purpose of PE and provided a clear framework through which this could be achieved. By adopting a physical literacy informed approach to physical education, the teachers were able to clearly and intentionally address holistic outcomes, provide more inclusive experiences and better personalise provision to support the learning needs of their pupils. The process enabled teachers to engage in critical reflection with the support of a mentor which helped with accountability, accelerated progress and created the urgency for pedagogical change.

Solutions

"Individuals find problems in order to solve them" (Shore et al., 2017, p. 57) so understanding and articulating the nature of barriers was crucial before teachers could strategise how to address them. This involves creating solutions that are sensitive to the specific challenges posed by each type of barrier so that measures can be implemented to navigate them. By the end of the professional development programme, participants were able offer solutions to some of these barriers, demonstrating that the process enabled them to feel empowered and gave them the opportunity to voice and express their professional judgements (Bolin, 1989) The participants' solutions focused on two main themes: raising the status and value of PE, and improving professional development opportunities.

Raising the Status and Value of PE and the Voice of Practitioners

Current positioning and de-valuing of PE and physical activity was perceived to permeate from Ofsted through educational institutions, from schools to universities, ultimately impacting individuals. Olivia (primary teacher) felt "*if the government changed what they were looking for in schools so that it wasn't just literacy and numeracy focused then that would feed down...to schools and...to universities.*" Olivia's perspective aligns with the assertions of Jeffrey and Woods (1996) who contend that Ofsted's influence can lead to a sense of de-professionalisation among educators. When teachers prioritise adherence to Ofsted's mandates over their own professional judgement, they risk losing their autonomy and sense of professional identity, potentially reducing them to mere technicians rather than respected professionals. To combat this, participants felt that a stronger professional voice advocating for the value of PE and the role of physical literacy among entities such as Ofsted, the government, schools, and PE departments could elevate the subject's status to be on par with other academic disciplines and raise awareness of the role and impact of a physical literacy informed approach. This in turn would increase their confidence in being a voice of authority in their subject so that they could promote physical literacy informed PE.

Despite these barriers, the professional development programme had provided participants with a renewed approach to teaching PE, bolstered by their increased understanding of physical literacy. This entailed more student-centred approaches that aimed to promote physical activity for life. This is reflected in Joe and Dave's comments:

> *"Probably the main bulk of understanding about the different theories and things that we've talked about and erm ensuring that students are physically active and can go onto being physically active throughout their life and developing the knowledge and understanding through more of a practical sense"* (Joe, secondary teacher)

520 *"The main thing is the developing kids' understanding of what motivates them and how*
521 *they can try and motivate themselves intrinsically to try and participate for life; and*
522 *trying different strategies that will help that."* (Dave, secondary teacher)

523 All participants reported that their understanding of physical literacy had improved and how
524 it encouraged them to view situations from the perspective of students and to pay attention to
525 *all* students, as confirmed by Sarah (secondary teacher), "*I've noticed a lot more the quieter*
526 *students, the less abled students, the middle students...and I think about the whole class a lot*
527 *more"*. In particular, the concept guided them to adopt a more holistic approach to promoting
528 physical activity by considering the physical, affective and cognitive domains and their
529 associated elements of motivation, confidence, physical competence and knowledge and
530 understanding. Isla (secondary teacher) stated, *"I've just got more of an awareness of the*
531 *three areas of physical literacy and whether I'm only focusing on one or whether I've*
532 *included all three."* This renewed approach to physical education came about through the
533 professional development highlighting the importance of holistic development, inclusivity
534 and personalisation and by coaching the participants on how this may be intentionally planed
535 for, observed and implemented in practice.

It was recognised that this new conceptual understanding needs to be supported by genuine commitment and buy-in from teachers to foster increased recognition and appreciation for physical literacy within the PE landscape. This was reflected in Andrew's (secondary teacher) statement, "*Are we going to commit to this? We think it's really good. Why did we even bother doing the process if we didn't think it's good*? *And it's not asking us to change teaching, at all, it's asking to hit those four areas*" Here, Andrew is referring to the four 'areas' of physical literacy: motivation, confidence, physical competence and knowledge and understanding. He suggests that, despite the relative ease of their integration into teaching, doing so requires a concerted effort. The professional development sessions and coaching conversations encouraged teachers to plan, observe and celebrate holistic outcomes.

It is widely acknowledged that governmental policies and school leadership play pivotal roles in shaping the perception of PE, both nationally and locally. Prioritising the enhancement of PE within governance and management structures will begin to reshape the educational landscape surrounding the discipline. This is crucial for integrating physical literacy into the fabric of PE. However, addressing this issue necessitates more than just structural changes. It also entails fostering a collective appreciation for PE, physical literacy, and physical activity promotion within the education sector and regulatory bodies such as Ofsted. Bridging the gap between these entities and promoting alignment in values can foster accountability and drive improvements in teaching practices. This, in turn, can lead to enhanced teacher training and professional development opportunities so that PE teachers, as custodians of the subject, can champion and articulate the value of PE and physical literacy.

Improving Teacher Professional Development Opportunities

Sparkes and Templin (2012) examined how many educators grapple with the perceived low status of PE, inadvertently internalising and perpetuating these negative perceptions. If PE were accorded higher status, it would likely lead to increased opportunities for professional development in the field. This would lead to more educators being exposed to the concept of physical literacy and increase the permeation of physical literacy informed PE practice. Primary participants recounted their limited training in PE. Historically, professional development for PE teachers has been scant, mirroring the subject's low status nationally and internationally (Moreira et al., 2002). This lack of funding and time for professional growth has persisted over time (Armour and Yelling, 2004), exacerbated by the scarcity of meaningful and relevant development opportunities (Nieto, 2009).

Existing professional development offerings in PE are varied, often provided by disparate bodies ranging from national organisations to individual consultants. Offerings are often fragmented and lack continuity, consisting primarily of one-off courses delivered by non-specialists, which may have limited lasting impact on teacher practice (Armour and Yelling, 2004). This is now also true for physical literacy professional development with the existing professional development landscape adding physical literacy to their menu of 'hit and run' professional development workshops. This, coupled with the low status of PE, has stifled opportunities for professional growth (Harris, 2014). Indeed, inadequate preparation in PE teacher education (PETE) is a global concern, identified in studies across several countries including the United States and Australia (McKenzie et al., 1998; Moore et al., 1997). Teachers consistently advocate for improved training and ongoing professional development to better equip them in delivering PE (Petrie et al., 2021). Revitalising PE's value at the highest levels, particularly by the government, is essential for prioritising initial teacher training and professional development. Effective professional development can be the catalyst for long lasting and wide-reaching operationalisation of physical literacy informed practice.

Conclusion

These findings underscore the presence of diverse cultures and sub-cultures that can either facilitate or impede the development of physical literacy. Schools, in particular, harbour unique cultures and sub-cultures within their communities. Addressing and understanding these cultures, including the varying values placed on PE in comparison to other subjects, is crucial. Introducing professional development initiatives without considering or comprehending the school culture, senior leadership dynamics, departmental, teacher, parent, and student sub-cultures is unlikely to yield sustained or significant impact.

Teachers identified potential solutions to operationalise physical literacy and address some of the barriers. These solutions revolved around two key themes: elevating the status and value of PE and practitioners professional voice and enhancing opportunities for teacher professional development. While barriers to operationalising physical literacy may persist, it is imperative to acknowledge their nature and respond with solutions aimed at challenging, reducing, alleviating, or eliminating them entirely.

This research joins others (Houser and Kriellaars, 2023 and Edwards, et al., 2019) in support for the value of physical-literacy informed PE practice and substantiates real lifeworld examples of PL being operationalised in school-based settings with serving practitioners. Throughout the study physical literacy professional development and coaching offered a framework through which teachers could reflect upon their current practice and the professional landscape. In doing so teachers were encouraged to better meet the needs of their pupils through physical education by providing more holistic, inclusive and personalised experiences.

The research was conducted with 14 teacher-participants which limits transferability and scalability, given the number of teachers of PE. The imbalance between secondary (n=11) and primary (n=3) participants was also a limitation, this is perhaps the unintended consequence of convenience sampling and with future studies a more balanced number of participants would be advised using purposeful sampling. Another limitation of this study was the lack of voice from representatives of all subcultures identified - in particular, student voice. In order to fully explore barriers and solutions to operationalising physical literacy in practice a whole school approach would have been more effective. Designing a whole school approach to professional development is strongly recommended for future research, as physical literacy should inform whole-school ethos. The subjectivity of this research is also acknowledged resulting from its relativist and constructionist underpinnings. The subjective nature of interpretation is also seen as a strength as conclusions are based on the voice of participants. Finally, it is also important to note that physical education is not the only medium through which physical literacy can be nurtured. A multi-sectoral, life course and community perspective should also be considered to fully embrace the movement journeys of children and young people as they grow and become adults. Similarly, the professional learning journey of teachers, other practitioners such as coaches and volunteers are also important because if physical literacy as a concept is to maximise its impact it must also unify community sport, physical activity and physical education.

This research moves the literature forwards by reporting on the realities teachers face as they navigate how to incorporate physical literacy within their PE practice. What is clear from this research is that the sociological and cultural factors that may mediate pedagogical change are as important as the proposed change (physical literacy informed PE) itself. Therefore, future research into professional development in physical literacy should comment not only on the positive impacts achieved by such interventions but also the problematic and real lifeworld challenges experienced by researchers and participants to better exemplify a more balanced narration of the effectiveness physical literacy professional development and physical literacy informed practice.

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Tables

Table 1: Participant information.

Primary School 1	Secondary School 1	Secondary School 2
Primary Teacher A (PTA) (Stephen) 15 Years Teaching Experience	Secondary Teacher A (STA) (Charlie) 6 Years Teaching Experience	Secondary Teacher 1 (ST1) (Isla) 10 Years Teaching Experience
Primary Teacher B (PTB) (Amy) 4 Years Teaching Experience	Secondary Teacher B (STB) (Sarah) 6 Years Teaching Experience	Secondary Teacher 2 (ST2) (Jodie) 7 Years Teaching Experience
Primary Teacher C (PTC) (Olivia) 3 Years Teaching Experience	Secondary Teacher C (STC) (Joe) 3 Years Teaching Experience	Secondary Teacher 3 (ST3) (Dave) 7 Years Teaching Experience
	Secondary Teacher D (STD) (Adam) 2 Years Teaching Experience	Secondary Teacher 4 (ST4) (Luke) 5 Years Teaching Experience
	Secondary Teacher E (STE) (Jamie) 1 Year Teaching Experience	Secondary Teacher 5 (ST5) (Andrew) 4 Years Teaching Experience
	Secondary Teacher F (STF) (Anne-Marie) 1 Year Teaching Experience	

Figures

Figure 1: *Identified barriers to operationalising physical literacy*