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Research and analysis

# Research review series: PE

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## Introduction

High-quality PE is an entitlement for all pupils, regardless of their starting points or their prior experiences of sport and physical activity. The national curriculum states: [\[footnote 1\]](#)

“ A high-quality physical education curriculum inspires all pupils to succeed and excel in competitive sport and other physically-demanding activities. It should provide opportunities for pupils to become physically confident in a way which supports their health and fitness. Opportunities to compete in sport and other activities build character and help to embed values such as fairness and respect.”

In PE, pupils learn increasingly intelligent movement and important knowledge that can reduce barriers to participation and inform their own healthy, active lifestyle choices. PE provides a gateway into the world of sport and physical activity.

Beyond physical participation, the traditions and cultural reference points associated with sport and physical activity are part of our shared heritage. Without being taught the language of sport and physical activity, pupils can miss out on an enriching aspect of our communal life. Kretchmar, when discussing the importance of physical activity and play, states that participation makes ‘our lives go better, not just longer’. [\[footnote 2\]](#) High-quality PE therefore is a physical and cultural entitlement.

This review explores the literature relating to the field of PE. Its purpose is to identify factors that can contribute to high-quality school PE curriculum, assessment, pedagogy and systems. We will use this understanding of subject quality to examine how PE is taught in England's schools. We will then publish a subject report to share what we have learned.

The purpose of this research review and the intended audience is outlined more fully in the 'Principles behind Ofsted's research reviews and subject reports'. [\[footnote 3\]](#)

Since there are a variety of ways that schools can construct and teach a high-quality PE curriculum, it is important to recognise that there is no single way of achieving high-quality PE.

In this review, we have:

- outlined the national context in relation to PE
- summarised our review of research into factors that can affect quality of education in the subject
- considered curriculum progression, pedagogy and assessment in PE and the impact of school leaders' decisions on provision

The review draws on a range of sources, including our 'Education inspection framework: overview of research' and our 3 phases of curriculum research. [\[footnote 4\]](#)

We hope that through this work, we will contribute to raising the quality of PE for all young people.

## Context

This section outlines some of the context of PE, including falling numbers at GCSE level and reduced curriculum time. This is important to frame the pivotal role that a high-quality PE curriculum can play in reducing the gaps that continue to exist between children from different backgrounds.

### The position of PE

PE is a national curriculum subject that is compulsory at key stages 1 to 4. It has its roots in physical development in Reception, where it is one of the prime areas of development. Regardless of whether PE is deemed a core or foundation subject, the PE curriculum will benefit from a clear and coherent sense of what it means to 'get better' at the subject.

The national curriculum identifies the aims of the subject and, broadly, the subject content to be taught at each key stage. The flexibility that this broad outline enables in PE can be

counterproductive if the subject expertise to meet these broad and ambitious goals is absent.

The national curriculum for PE aims to ensure that all pupils:

- develop competence to excel in a broad range of physical activities
- are physically active for sustained periods of time
- engage in competitive sports and activities
- lead healthy, active lives

Academies and free schools that do not teach the national curriculum are required to provide a broad and balanced curriculum that ‘promotes the spiritual, moral, cultural, mental and physical development of pupils’.<sup>[footnote 5]</sup>

This review explores the curriculum that is necessary to achieve the broad aims for PE as set out in the national curriculum. It is not designed to encompass additional goals of PE that transcend the national curriculum. It has been long agreed that PE can do many things, including develop pupils both socially and emotionally.<sup>[footnote 6]</sup> Although these broader holistic developments are desirable, they are not solely the responsibility of PE.

Under the education inspection framework (EIF), there are 4 key judgements that link to an overall judgement of effectiveness: quality of education; personal development; behaviour and attitudes; and leadership and management.

PE can make valuable contributions to pupils’ personal development. This judgement considers how the curriculum can extend beyond the academic, technical or vocational. In a PE context, this can include how schools are developing pupils’ understanding of how to keep physically healthy, eat healthily and maintain an active lifestyle, including giving ample opportunities for pupils to be active during the school day and through extra-curricular activities.<sup>[footnote 7]</sup>

The quality of education judgement is about the academic substance of what is taught, and what pupils learn and know in each subject. Our curriculum research review series looks at the factors that can affect quality of education in different subjects. Therefore, this review is primarily concerned with the school PE curriculum considered through the lens of the quality of education judgement.

## What is PE?

Despite the national curriculum aims, the purpose of PE is still highly contested: it means different things to different people.<sup>[footnote 8]</sup> In the past, PE has been described as a chameleon ‘that changes its colours’ based on the differing priorities of different stakeholders.<sup>[footnote 9]</sup>

The terms PE, sport and physical activity, although closely related, are not synonymous. They do not share the same purpose or goals.<sup>[footnote 10]</sup> In addition, other terminology used to denote PE-related thinking can contribute to even more ‘muddled thinking’ within the sector and with wider stakeholders regarding what PE is and what it can do for pupils.<sup>[footnote 11]</sup> For example, the widely used term ‘physical literacy’ can be framed differently depending on underpinning ideologies.<sup>[footnote 12]</sup> This can lead to differences in how the term is interpreted and manifested within the curriculum.<sup>[footnote 13]</sup>

The body of knowledge that informs PE draws on a range of disciplines, including physiology, psychology and sociology, each with their own methods of knowledge production. For example, knowledge of how breathing rates increase during exercise has been established through scientific enquiry, whereas strategies to outwit an opponent in rugby have their disciplinary roots in elite sport. To be physically educated is to competently and confidently apply the important contributions that each field makes to your own participation in sport and physical activity. This requires careful prioritisation of the knowledge that will enable pupils to know more and do more in PE.

Extra-curricular provision and sport that occur within school can and should complement and enrich the PE curriculum for all. In this way, there is a symbiotic relationship between timetabled lessons and extra-curricular participation. However, extra-curricular activities cannot replace the careful selection and sequencing of content that is required to physically educate all pupils so that they know more and can do more.

## Reductions in time allocated to PE

The Association for PE, in its 2015 report, recommended allocating 2 hours per week to PE.<sup>[footnote 14]</sup> Our research in 2018 found that 69% of schools visited had 2 or more hours of PE in the timetable each week but also found that, in some cases, precious time was being lost in getting changed and setting up.<sup>[footnote 15]</sup> The time allocated and the time spent learning therefore are 2 separate factors that affect pupils’ PE experience. Powell and others report an average of 35.3 minutes spent in a PE lesson within the ‘working area’ (for example, a school hall, field or swimming pool). This shows that a considerable number of minutes each lesson are being lost to non-physical activity.<sup>[footnote 16]</sup>

More specifically, at a secondary level, further factors reduce time allocated to PE. The Youth Sport Trust reported that in key stage 3 pupils receive an average of 124 minutes of curriculum PE each week, reducing to an average of 98 minutes in key stage 4.<sup>[footnote 17]</sup> The same survey reported reductions in curriculum time for PE by 20% for key stage 3 and 38% for key stage 4 between 2013 and 2018. Over a third of participants from the report claimed that the reductions were due to core subjects being given additional time and the exam pressures of Progress 8 and the EBacc. This

suggests that PE exists within a framework of competing pressures that can restrict the time needed to develop competence.

## Who takes PE qualifications?

Recent data shows that although the number of sports-related vocational qualifications at key stage 4 has increased by 62% from 2018 to 2021, the number of GCSE entries has reduced by 17% over the same period. [\[footnote 18\]](#)

There are many reasons why the change in qualification choices might be occurring. The decrease in GCSE entries might be due to the increased academic rigour in the specification content, the increased emphasis on written examinations and the reduced percentage of the overall grade derived from the practical element of the course. [\[footnote 19\]](#)

Although the gender composition of both BTEC and A-level entries has remained stable since 2018, the BTEC qualification entries are still predominantly male at 75%. This is compared with a more even gender split for A-level entries at 56% male in 2020. [\[footnote 20\]](#)

## The importance of PE in reducing inequalities

PE is far wider than physical activity alone, but it does play an important role in promoting and sustaining physical activity. Decisions that pupils make about physical activity can be affected by how much family support they have, their families' economic status and the perceptions they have built based on socialisation into play and sport from an early age. [\[footnote 21\]](#) Some pupils might therefore cumulatively benefit from positive physical activity and sport-related interactions outside of PE alongside their experiences within a school's PE curriculum. For others, however, PE is their only opportunity to take part in physical activity and develop movement-related competence.

Some groups of pupils, including those from ethnic minority backgrounds and those with special educational needs and/or disabilities (SEND), report lower levels of physical activity. [\[footnote 22\]](#)

Therefore, timetabled PE lessons might be the only opportunity that some pupils have to learn the knowledge they need to make informed decisions about their own participation in physical activity.

Although it cannot create and sustain an active society alone, an ambitious PE curriculum can ensure that all pupils have a chance to benefit from physical activity and sport, despite the subtle advantages that only some pupils get beyond the school gates. [\[footnote 23\]](#) Through the careful selection and sequencing of curriculum content that develops pupils' competence, more pupils can believe that PE is for them and inequalities can be reduced.

The important role of PE to close gaps becomes more apparent when exploring the divides within particular sports and physical activities. For example, Sport England found that 44% of children from lower socio-economic backgrounds reported that they could swim 25 metres, compared with 85% of children from more affluent families.<sup>[footnote 24]</sup> Similarly, it was estimated that around half of children from ethnic minority backgrounds in England were able to swim 25 metres, in comparison with two thirds of White British children. Swimming and water safety are part of the PE national curriculum in primary schools, and schools must report on the number of pupils meeting the national curriculum expectations. The current statistics may suggest that the provision of the swimming and water safety components of the national curriculum are not yet good enough. Since swimming and water-based recreation remain popular activities among younger people and swimming is an important survival skill, it is crucial that all pupils intentionally and incrementally develop their water competence within the PE curriculum.<sup>[footnote 25]</sup> This example shows that the PE taught curriculum can play a vital role in broadening access to important knowledge and skills for all pupils.

## The curriculum

This section explores the curriculum necessary to meet the breadth and ambition of the national curriculum. The PE curriculum that each school adopts should set out what it means to ‘get better’ at the subject. The 3 pillars of progression outlined within this section (motor competence; rules, strategies and tactics; and healthy participation) provide a useful basis to navigate the national curriculum aims. This section also pays close attention to content selection, sequencing and teaching for memory.

The sport- and physical activity-specific examples in the following sections are designed to illuminate the points being made. They have been selected based on what most readers might recognise. There are other sports and physical activities that could have been included that would support the same points and that can provide opportunities for all pupils to know more and do more in PE.

## The importance of competence

Competence is a key feature within the first national curriculum aim. It could be argued that this underpins the successful achievement of the other aims, too.<sup>[footnote 26]</sup> White defines competence as: ‘the capacity of a pupil to interact with a given environment as a result of prolonged learning, to thrive in their phase at school’.<sup>[footnote 27]</sup> Using this helpful definition, it is not the expectation that PE is a preparation path for elite athletes: PE alone does not have the time, resources or intent to

do this. But PE can provide knowledge through instruction, practise and feedback for pupils to flourish within their phase and prepare them for the next stages of learning.

In PE, developing competence is important because of its relationship with motivation. [\[footnote 28\]](#)

There is evidence showing that when pupils move through a well-sequenced curriculum their self-efficacy increases because of increased knowledge and competence. [\[footnote 29\]](#) The relationship between competence and confidence could be described as mutually reinforcing: low competence within a sport or physical activity can be associated with low confidence and a reduction in the likelihood of participation. [\[footnote 30\]](#) Additionally, recent research has emphasised the important role that actual competence plays more broadly. It has found a positive relationship between average to high levels of actual motor competence, perceived motor competence and organised sport participation and a healthy weight, as well as higher levels of autonomous motivation in 9- to 13-year-olds. [\[footnote 31\]](#) But competence as a concept is complex and can easily mask what it is that pupils need to know, do and remember to be competent.

In this review, we suggest 3 conceptually distinctive but functionally connected pillars of progression that develop competence to participate, that PE can be realistically accountable for to meet the aims of the national curriculum. These are:

- motor competence – knowledge of the range of movements that become increasingly sport- and physical activity-specific
- rules, strategies and tactics – knowledge of the conventions of participation in different sports and physical activities
- healthy participation – knowledge of safe and effective participation

## **The curriculum: progression in PE**

### **The first PE pillar of progression: motor competence**

Motor competence can be described as a person's ability to execute a variety of motor actions, including the coordination of fine and gross motor skills. These are necessary to participate in activities in everyday life, including play and physical activity. [\[footnote 32\]](#)

It is not difficult to see the important role that efficient and effective movement patterns within a physical activity context play in the success and enjoyment of physical activity and sport. [\[footnote 33\]](#)

There is no other curriculum subject that develops the broad range of gross motor skills that PE can



and should.

For some pupils, PE will be their first and only experience of being taught how to produce confident and controlled motor movement. For others, it should give them the instruction, practise and feedback required to take their knowledge and understanding beyond what they bring from their home environment. To improve motor competence, pupils require sufficient and well-designed opportunities. Some opportunities will be provided beyond timetabled PE lessons, including during breaktime and lunchtime, but they should first and foremost be present in the PE curriculum.<sup>[footnote 34]</sup> PE in this way, for all pupils, plays an important role in securing efficient and effective movement.

In recent years, it has been reported in international studies that motor skills in children and adolescents are declining.<sup>[footnote 35]</sup> Furthermore, pupils from areas of higher deprivation have less-developed movement skills than their peers from more affluent areas.<sup>[footnote 36]</sup> This is concerning because without secure foundations of motor competence, pupils' current and future involvement in physical activity and sport can be hindered.<sup>[footnote 37]</sup> For example, a pupil who cannot jump safely and effectively is not ready for more complex activities that require that movement, for example gymnastics and athletics. This can negatively affect pupils' motivation and confidence and therefore reduce the quality and quantity of physical activity they access and engage in beyond timetabled PE lessons.<sup>[footnote 38]</sup> Carefully planning how motor competence will be developed is an important focus of the PE curriculum because a confident and competent mover is more likely to be an active mover.<sup>[footnote 39]</sup> A child with lower levels of motor competence may be less inclined to participate in physical activity or sport.<sup>[footnote 40]</sup> Schools are well placed to provide the high-quality instruction, practise and feedback that enable all pupils to develop their quality of movement to participate confidently and competently in a broad range of physical activities.<sup>[footnote 41]</sup>

## Fundamental movement skills

To have the best chances of establishing and maintaining physically active lives both across a broad range of activities and in the long term, it is important that pupils develop secure foundations for movement. To do this, they need to develop adequate levels of fundamental movement skills (FMS) in the early years.<sup>[footnote 42]</sup>

FMS can be defined as a set of basic, learned motor patterns that do not occur naturally.<sup>[footnote 43]</sup> The typical progression from inefficient to more proficient and mature patterns of movement requires high-quality instruction, practise and feedback. FMS can be subdivided into 3 sets of skills that have commonly identified constituent aspects of effective preparation, execution and recovery.<sup>[footnote 44]</sup>

- locomotor skills, for example running and jumping
- stability skills, for example twisting and balancing

- manipulation skills, such as throwing and catching

Pickup and Price state that ‘initial skill-learning should focus on bilateral actions – walking, running and hopping – before more complex actions such as skipping and galloping are introduced’.<sup>[footnote 45]</sup> This progression from simple to complex movement patterns, once the former has been secured, is essential in reducing the likelihood of gaps and misconceptions in pupils’ knowledge acquisition and application. In both structured and less-structured learning, carefully designed practices and feedback can improve pupils’ early competence. For example, a teacher may correct a pupil so that they land softly on the balls of their feet when skipping. This is important to enable the pupil to skip with increased efficiency, not just to make skipping more enjoyable but also as an important precursor to learning how to change direction quickly in games such as netball and rugby.

Although motor development is age-related and not age-dependent, it can be argued that FMS are best developed between 3 and 8 years old. Therefore, developing careful progression through Reception and primary school is vitally important.<sup>[footnote 46]</sup> Once secure, FMS form the building blocks for more complex movement skills, which will be heavily relied on for successful participation in a variety of physical activities.<sup>[footnote 47]</sup> However, Duncan and others found that pupils aged between 6 and 9 years old in England are not competent in basic FMS. Less than a quarter of pupils in their sample had achieved mastery in the run, jump, throw or catch skills.<sup>[footnote 48]</sup> Similarly, Lawson and others found that when exploring a wider range of FMS, including the hop, skip and stability skills, fewer than 40% of pupils aged between 7 and 10 in England achieved mastery in each skill, and 27% had not achieved mastery in any of the skills.<sup>[footnote 49]</sup>

Interestingly, comparisons with other countries give us further insight and possibly indicate lower quality of instruction and fewer opportunities for formal and informal practice in England.<sup>[footnote 50]</sup> A study highlighted significant differences between 9- to 10-year-old English and Chinese children. Thirty-seven per cent of English boys and 23% of English girls had achieved mastery/near mastery for the run. In the Chinese cohort, 83% of boys and 87% of girls had achieved mastery/near mastery. Fewer differences were noted for jumping but similar significant differences were seen in throwing, again with fewer English children achieving mastery/near mastery. The PE curriculum must address these disparities by providing adequate emphasis on developing, refining and practising FMS in increasingly complex situations.

Research has repeatedly highlighted that sex influences FMS competency despite little apparent biological difference between boys and girls in the early years.<sup>[footnote 51]</sup> Studies have repeatedly found that girls show lower object-control skill competence than boys.<sup>[footnote 52]</sup> This may reflect the types of activities that boys and girls engage in during free play. Bardid and others suggest that boys might participate in more ball sports (object-control related activities) and girls might participate in more locomotor-related activities such as dance and gymnastics.<sup>[footnote 53]</sup> Beyond primary school, an Irish study by O’Brien and others found significant differences between boys and girls possessing advanced skill proficiency across a range of basic FMS at age 12 to 13.<sup>[footnote 54]</sup> Sport England has also highlighted differences in activity levels outside school, which might mean

that boys are benefiting from more opportunities to practise particular FMS.<sup>[footnote 55]</sup> Timetabled lessons must therefore provide all pupils with the high-quality, appropriate instruction and planned activities required to develop their FMS.

It is vital to acknowledge the importance of actual competence as opposed to perceived competence within these studies. Although perceived competence can play an important role in motivation, younger children can have unrealistic perceptions of their movement competence.<sup>[footnote 56]</sup> It therefore becomes imperative that young children have opportunities to systematically develop their competence across the range of FMS, within different contexts from the prime area of physical development through the early stages of the PE national curriculum in primary school.

Bolger and others also discuss the importance of practice time and feedback to build and refine coordinated and controlled movement patterns before increasing complexity.<sup>[footnote 57]</sup> Children should have the time they need to practise simple to increasingly complex movement patterns through both intentional structured and unstructured approaches to develop, consolidate and deepen their knowledge, understanding and skills.<sup>[footnote 58]</sup>

Being offered only unstructured opportunities to learn, practise and refine important FMS in primary school will not guarantee that all children will discover or intuit the important components of competent participation in physical activity.<sup>[footnote 59]</sup> Some pupils with limited knowledge may inadvertently narrow their own curriculum by choosing to only participate in certain unstructured activities. They may also miss important opportunities to progress if they are not supported and encouraged to benefit from further instruction, practise and feedback to develop, refine, review or embed their knowledge that are available to them during unstructured times.

It requires subject expertise to identify those pupils who require additional time to practise and specific instructional activities to develop their movement efficiency. Morgan and others reinforce the importance of teacher expertise.<sup>[footnote 60]</sup> However, international studies still highlight primary school teachers' lack of competence and confidence in teaching FMS.<sup>[footnote 61]</sup> It is important that teachers know the common misconceptions that occur and the instructional practices needed to develop competence of all pupils but especially at younger ages, as they begin to form their own views on what they feel they are 'good' at and where they can succeed. Furthermore, without security in these building blocks of movement it is difficult to ascertain how pupils can be expected to be full and enthusiastic participants in PE and show interest and take part in physical activity beyond timetabled lessons.<sup>[footnote 62]</sup>

Within and beyond timetabled instruction, practise and feedback, the availability of equipment to develop these skills plays an important role.<sup>[footnote 63]</sup> Throwing and catching projectiles of different shapes and sizes will enable pupils to develop important understandings that relate to flight and distance control and how they adapt their body position for accuracy and power.

## Beyond fundamental movement skills

Although competence in FMS might not determine success in later sport or physical activity, their acquisition is an important precondition. Longitudinal data-tracking of pupils' FMS competence through childhood into adolescence suggests that FMS are an important predictor of adolescent physical activity.<sup>[footnote 64]</sup>

Clark and Metcalfe have a useful metaphor of 'mountain peaks' to describe the importance of FMS.<sup>[footnote 65]</sup> Proficiency in FMS acts as a strong platform to navigate different 'mountain peaks' (sports and physical activities) and provide the knowledge for pupils to confidently and competently explore a greater range of them. This might include some of the most popular lifelong physical activities globally, such as walking, cycling, running, swimming, yoga and resistance training, or a broader scope across a range of different sports and physical activities.<sup>[footnote 66]</sup>

Seefeldt considered there to be a 'proficiency gap' where FMS had not been secured, which restricts pupils from accessing more specialised movement patterns.<sup>[footnote 67]</sup> This suggests that if pupils progress through the primary curriculum without a strong foundation of FMS, they will struggle with the increasingly specialised skills being presented in a range of more specific activity contexts. All pupils, therefore, need time to practise and refine these movement patterns, both in isolation and through 'transitional activities' that challenge them to extend their knowledge.<sup>[footnote 68]</sup> For example, pupils in key stage 1 participating in an attacking and defending activity can practise varying their speed of running, stopping and turning. These activities provide the opportunity to work towards increased efficiency and effectiveness of movement within different parameters. They also enable pupils to link increasingly complex movements together, before moving on to more context-specific practice in key stage 2.<sup>[footnote 69]</sup> However, pupils can be at an early stage of movement at any age and might require more instruction, practise and feedback to secure the important initial building blocks at other stages of schooling too. O'Brien and others found that large numbers of secondary school pupils do not display proficiency across the FMS.<sup>[footnote 70]</sup>

## The second PE pillar of progression: rules, strategies and tactics

Movement execution is a vital part of successful participation in sport and physical activity. However, it is not enough to be competent alone. For example, a pass in football can be powerful and direct but if the pass is to the wrong person then it is ineffective. Intelligent movement requires pupils to move in accordance with the demands of the context, which is informed by their knowledge of the relevant conventions and conditions of the activity. As novices, pupils need to be explicitly taught the knowledge that informs and successfully directs their movement: that is, knowledge of rules, strategies and tactics.

Grehaigine and others regarded tactics during a game as decisions about how to move, when to

move and where to move. The specificity of tactics and time dependency means that tactical learning cannot easily be separated from motor competence, since a tactic is only successful if the participant can execute the movements involved.<sup>[footnote 71]</sup> This shows the important interconnection of the pillars of progression in PE. They are not disconnected lists of facts but closely aligned conventions linked to movements within specific activities that help develop pupils' competence to participate.

Tactics are commonly associated with game-based activities, such as basketball, handball and tennis. There are shared tactics between similar types of games, for example attack and defence within invasion games. Defence, in this case, can be further broken down into defending the goal or defending space.<sup>[footnote 72]</sup> The tactical problems are shared even though many of the actions required to demonstrate the tactic in different sports and physical activities are different.

Not all activities will have their own rules or tactics: these facets are more closely associated with sports, despite rules broadly covering more basic conventions. For example, a hop being on one foot could be described as a rule of hopping. But all physical activities and sports will have strategies for success, even those that are less formal. A strategy is less time-dependent and has a broader relevance beyond game-based activities.<sup>[footnote 73]</sup> For example, during orienteering, pupils need to know the strategies required to complete the course in the quickest times. Similarly, dance includes knowledge of timing and space; these could be considered the strategies that make a dance successful because of their importance in conveying the story intended.

### **The third PE pillar of progression: healthy participation**

The fourth national curriculum aim refers to pupils leading healthy, active lives. Several large-scale interventions have demonstrated the role that PE can play in providing knowledge relevant to healthy participation within different domains.<sup>[footnote 74]</sup> Within specific activities, PE can play an active role in challenging misconceptions and restricted understandings of how to participate in sport and physical activity that might have been established outside of school, such as children being taught to swim breaststroke with their head always above the water. Similarly, PE can challenge inaccurate knowledge that might be unsafe or cause injury, for example improving long-distance running without understanding the importance of training intensity and duration and rest periods.

Generic ideas about health that are disconnected from a context can be quite meaningless to pupils, for example the idea that walking 10,000 steps a day is good for you. Many young people 'know' the relationship between exercise and health because it is frequently promoted within public health discourse. But public health messages are often understood differently by different people depending on their prior knowledge and experiences.<sup>[footnote 75]</sup> PE plays a vital role in connecting important ideas about health to physical activity. It ensures that pupils explicitly learn, for example,

the ways in which you prepare for safe and effective participation in different activities or the different fitness demands. Disconnected facts and ideas can make it difficult for pupils to make important informed decisions about their own healthy participation. The crucial and strategic connection between physical activities and/or sports and health, which is relevant to learning knowledge within this pillar, is paramount.

Similar to the pillars of motor competence and rules, strategies and tactics, there are important concepts (for example, 'aerobic' and 'anaerobic') that are useful for pupils to develop an understanding of how to enhance their current and later healthy participation. However, a study by Deng and others found that a large number of pupils either had not heard of the concepts aerobic and anaerobic or had misconceptions about them that prevented them explaining the concepts in relation to different activities.<sup>[footnote 76]</sup> This is important because Zhang and others suggest that by strategically developing pupils' knowledge of, for example, important facts about the human body and physical activities and how to perform appropriate activities for health benefits, pupils' interest can increase.<sup>[footnote 77]</sup>

This increasingly detailed knowledge of the broader physiological, psychological and socio-cultural aspects of the physical activity and sport that pupils are participating in within PE lessons is also important to support and encourage their healthy, active lives beyond PE lessons. This requires pupils to be taught knowledge that allows them to proactively analyse the influences on their own health-related behaviours and link these to the physical activities and sports taught within the curriculum. For example, pupils not only need to know the short- and long-term benefits of doing gymnastics but also where there are local opportunities to be physically active and participate.<sup>[footnote 78]</sup> When pupils more readily understand their context and have the knowledge to strengthen and amplify their own health resources, they can exercise more power to make informed decisions about their present and future participation.<sup>[footnote 79]</sup>

## Vocabulary in PE

PE is a vocabulary-rich subject. Besides the specific terminology, including for example muscle names or names of specific movements, there are some informal terms used that effectively 'chunk' together multiple and complex instructions or feedback. For example, when playing football, the word 'line' is often used to instruct someone to continue using the width of the playing area and pass the ball down the sideline to a teammate. Pupils will only know the meaning of terms like this and be able to attempt to respond as intended if they have been taught the specific language of the activity or sport. A lack of shared understanding can be a barrier to participation, and pupils can feel excluded from certain activities and sports if they do not know the terminology. This exclusion extends beyond physical participation, hindering pupils' ability to discuss and debate sport and physical activity.



Furthermore, using the precise names of rules, strategies and tactics, for example, is important to enhance intelligent movement. Lemov suggests that a clear and shared understanding of vocabulary and phrasing within a domain, for example ‘touch-tight defending’ and ‘playing between the lines’, improves pupils’ observational awareness.<sup>[footnote 80]</sup> Carefully planning when pupils will first encounter and re-encounter key vocabulary and when and how complexity increases are important in developing pupils’ knowledge and access to particular physical activities and sports.

Beck and others have a useful framework for categorising vocabulary and ensuring that it is explicitly considered in curriculum planning.<sup>[footnote 81]</sup> For example, the term ‘possession’ could be considered a tier 2 word (infrequent in speech but frequent in writing) in other curriculum subjects but in PE it could be a tier 3 word (subject-specific terminology) because it has a particular technical meaning in PE. It is important that PE leaders and staff carefully consider the most appropriate vocabulary and definitions to use when teaching and where and when pupils will be taught these to develop a shared common language. It is important to check pupils’ understanding of key terminology used within lessons and ensure that all pupils are taught precise meaning within context.

## The curriculum: types of knowledge in PE – declarative and procedural

It is useful to look at knowledge in PE through the lens of declarative (knowing what) and procedural (knowing how) knowledge.<sup>[footnote 82]</sup> As part of physically educating pupils, both forms of knowledge have value as ‘two sides of a coin’: linked and yet important in their own right.<sup>[footnote 83]</sup>

Declarative knowledge in PE is the factual knowledge concerning movement, rules, tactics, strategies, health and participation. This knowledge is not a list of disconnected facts; it is explicitly linked to the content being taught. Declarative knowledge can be communicated through verbal or written means. Pupils could, for example, demonstrate their declarative knowledge through question-and-answer sections of a lesson, or spoken or written observations of a practical demonstration. With a more detailed declarative knowledge base, pupils can better verbalise their strengths and limitations as well as communicate their ideas, their decisions and the choices that they make during an activity or one that they observe.<sup>[footnote 84]</sup>

Declarative knowledge alone, however, is not enough to physically educate because ‘one can repeat the facts yet know nothing about the subject’ in the same way that – arguably – you can acquire knowledge and not know how to use it.<sup>[footnote 85]</sup> For example, the declarative knowledge of how to outwit an opponent in rugby is not the same as successfully outwitting them on the field.

Procedural knowledge can be viewed as the know-how to apply declarative facts. This might include applying the tactics to a practice situation or modified game. This knowledge in a PE setting is best put into practice through physical demonstration or physical participation. Anderson theorised that all procedural knowledge begins as declarative knowledge and therefore argues that before taking action, you must have acquired a degree of declarative knowledge. [\[footnote 86\]](#) For example, someone must have knowledge of what a headstand looks like and how to retain balance, before they start to practise doing one. Similarly, Chatzipanteli and others indicated that pupils require adequate declarative knowledge to improve their procedural knowledge. [\[footnote 87\]](#)

Both forms of knowledge, the 'know-what' and 'know-how', are vitally important in ensuring that pupils are being physically educated. Pupils need to be explicitly taught what the links are between declarative and procedural knowledge. [\[footnote 88\]](#) Without the declarative knowledge of motor movement, rules, strategies and tactics, and healthy participation, it might be that pupils can perform physically but they are not able to critically engage fully in the field of sport and physical activity, which could enrich their experiences.

The careful selection and systematic teaching of both declarative and procedural knowledge together underpins what it is to be physically educated. In an American study, Zhang and others suggest that it is the lack of opportunity to systematically accumulate declarative and procedural knowledge that may contribute to the continued decline of interest in physical activity knowledge as pupils get older. [\[footnote 89\]](#)

### **Based on the above, high-quality PE may have the following features**

- Teachers know that PE includes clearly defined knowledge that can usefully be categorised into declarative and procedural knowledge. These forms of knowledge in PE are often inextricably linked.
- Teachers know that PE is not synonymous with physical activity or sport. They share similarities but also have important differences.
- Leaders and teachers have thought carefully about what it is to know more and do more in PE. This understanding is informed by the national curriculum's aims and component knowledge has been identified to develop pupils' competence.
- A strong foundation of FMS is developed, starting in the early years. It sequentially develops through transitional activities into more specialised sport and physical activity contexts. FMS are a precondition to accessing the later, more specialised movement patterns required for competence in sport and physical activity.
- Teachers make sure that pupils' movement is not only efficient and effective but intelligent and context-related. They make sure pupils have knowledge of rules, strategies and tactics in order to direct and guide successful movement.



- Knowledge of healthy participation includes important knowledge of key concepts pertaining to health, participation and physical activity. These are taught systematically, honour the specific learning context and increase in complexity throughout the curriculum.

## The curriculum: learning is domain-specific

Skill development is context-dependent in that ‘the interactive components within a learning situation all play an important role’.<sup>[footnote 90]</sup> For example, when learning to throw a ball, the shape and size of the ball and whether the ball is being thrown for accuracy or for distance will directly influence how the throwing action is taught. It is difficult for pupils to apply their prior knowledge to a newer context when the physical space differs, for example between different sports or physical activities with different parameters and goals.<sup>[footnote 91]</sup> This is especially difficult for younger children.<sup>[footnote 92]</sup> It is therefore beneficial to spend time practising and rehearsing the knowledge, for example a throwing-and-catching action, in one domain. Moving pupils too quickly into new contexts can reduce their fluency as they attempt to meet the new contextual demands without adequately having secured the steps required to demonstrate success in one context.

The importance of context transcends motor competence. For pupils to display successful teamwork in an activity, for example an invasion game, specific component knowledge is necessary. This might include the rules of the game and the tactics that might need to be employed to be successful. Without this important contextual knowledge, the likelihood of demonstrating teamwork is reduced because it is highly influenced by the specific context and having the prerequisite motor competence to demonstrate it. The component knowledge of composite concepts therefore needs to be identified and taught to all pupils.

This is similar to the capacity to problem-solve, which also relies on domain-specific knowledge and expertise.<sup>[footnote 93]</sup> This means that pupils who lack familiarity with a new learning context, for example volleyball, will struggle to transfer their problem-solving approaches neatly and automatically from other areas where they do have a deep domain-specific knowledge, for example climbing. This is despite the commonly held belief that there are certain mental processes that determine ‘being good at critical thinking’.<sup>[footnote 94]</sup> It is therefore beneficial to teach the component knowledge that underpins composite skills like problem-solving and teamwork in each context specifically rather than attempting to teach generic approaches.

## The curriculum: selecting content to teach

All pupils should follow a curriculum that is at least similar in breadth and ambition to the national curriculum. Decisions about which sports or physical activities to teach can be carefully made based on how they develop and refine the pillars of progression that can support meeting the needs of the national curriculum.

The knowledge taught in PE will serve to shape and inform pupils' decisions about their own participation. It is important to ask: if PE was not a curriculum subject, what might pupils not have the opportunity to learn that is important for them to develop healthy, active lives? In carefully considering an answer to this question, it is clear that not everything can be taught and that not every sport or physical activity is of equal value.

Fordham makes a useful distinction between knowledge that is deemed 'individually necessary' and that which is believed to be 'collectively sufficient'.<sup>[footnote 95]</sup> In PE, swimming and water safety are individually necessary as per the national curriculum. FMS are another example of essential content as they are an important prerequisite for learning more complex movement patterns.

Beyond what is deemed individually necessary, not every sport or physical activity can or should be taught. Neither can all relevant and appropriate content that relates to informing pupils' decisions about healthy, active lives be taught. The PE curriculum must comprise, collectively, enough declarative and procedural knowledge to amount to a high standard of PE at primary and secondary level. In selecting the ambitious and increasingly complex curriculum content for a collectively sufficient PE experience, the 3 pillars are a useful filter for choosing appropriate activities. This means selecting sports and physical activities that develop a range of motor competencies, a range of rules, strategies and tactics that are important for pupils to understand and a range of knowledge to enable healthy participation.

Our research in 2018 found that many schools could tell us in detail about the activities they did, and topics they covered, but they were unclear about their curriculum intent, implementation and impact.<sup>[footnote 96]</sup> Content should be selected based on its role in meeting the broad and ambitious goals of the curriculum. For example, including athletics in a curriculum plan can not only develop pupils' FMS into more complex sport-specific movements but can also teach pupils how the body responds to different forms of exercise and how it recovers depending on the duration and intensity of exercise. Athletics, therefore, can be selected for the intrinsic worth of learning how to participate in a range of track and field events but also for its contribution to developing the declarative and procedural knowledge pupils need to make informed choices about their own healthy, active lives. Similarly, dance might be selected because of the development of movement competencies it involves, as well as it giving pupils access to different kinds of cultural heritage.<sup>[footnote 97]</sup>

The curriculum aims cannot be met by games alone, nor can they be met by competitive activities alone. Our research in 2018 also found that football was the activity most present in a PE

curriculum: 81% of schools were teaching football.<sup>[footnote 98]</sup> Further analysis found that 7 of the 10 most popular activities could be classed as ‘competitive’ and 5 of those included a ball. The domination of team sports within a curriculum can reduce opportunities for positive learning experiences for pupils with SEND.<sup>[footnote 99]</sup> Content selection requires careful thought to ensure that all pupils can access the breadth of experience required to develop the competency to meet the national curriculum aims.

## The curriculum: learning takes time

Curriculums with short blocks of learning across multiple activities can be described as being ‘a mile wide and an inch thick’.<sup>[footnote 100]</sup> This approach can mean that the curriculum lacks the depth of learning required for pupils to achieve any level of success in a particular activity before moving on to the next. This is particularly concerning when considering the role that competence can play in motivation and engagement.<sup>[footnote 101]</sup> A focus on fewer sports or physical activities, taught in more depth, can enable more pupils to develop the competency required within the national curriculum.

Squeezing an activity or sport’s curriculum time in order to fit in a larger variety of different activities across the year can lead to key knowledge being forgotten and pupils developing gaps in their knowledge. This can make it difficult for them to engage in more complex content later on, especially if this content is foundational to future learning. In some cases, the development of advanced coordination patterns will be the result of many hours of practise spaced across terms or years.<sup>[footnote 102]</sup> Some knowledge, therefore, will require more time to teach, including structured revisiting and additional complexity taught across particular years. The important questions to consider are: how well is the time that is provided in the curriculum to teach PE being divided and used? Is enough time being provided to practise and develop competence?

## The curriculum: content sequencing

Meaningful learning occurs when pupils are enabled to make sense of their learning and organise it coherently within what they already know.<sup>[footnote 103]</sup> It is therefore important that the curriculum sequence maximises the likelihood that all pupils will be able to connect the steps they have taken to know and do more in PE. Deng and others highlight that connection is more likely when pupils have secured important prerequisite knowledge before moving on to more complex knowledge.<sup>[footnote 104]</sup> This might include revisiting, refining and building on key fundamental movement skills before introducing additional complexity.

Content can be sequenced based on how progression of knowledge builds over time, from simple to complex and through different sports and physical activities. For example, throwing and catching are important aspects of motor competence and attack and defence are important features of rules, strategies and tactics that can be developed through different sports and physical activities.

Curriculum progression does not always occur in PE through domain-specific complexity. It also occurs through selecting different activities that require pupils to recall prior knowledge and seek similarities and contrasts between the different contexts. For example, pupils can be taught the importance of maintaining possession of the ball as an important strategy for success in an invasion game. If the sport or physical activity to teach this content was football, then pupils would also learn the importance of dribbling and passing and the important parts of the body to pass and receive the ball. Although hockey involves different movements and rules and different strategies and tactics, pupils' knowledge of the importance of maintaining possession that they learned in football can be developed and extended. [\[footnote 105\]](#)

Similarly, pupils can be taught the similarities and contrasts between principles of training to improve their participation in different sports and physical activities. For example, pupils might learn about the importance of muscular endurance, specifically for dance, but they could develop a broader understanding of muscular endurance through another activity, such as swimming. They could also be taught other desirable fitness components within each activity to provide a richer concept of what fitness means generally and what it looks like across a range of activities and sports. Through careful positioning of clear and specific examples, pupils can develop their understanding and make the correct connections to their prior knowledge.

Vocabulary can also be revisited in different contexts. For example, pupils might be taught what the word 'streamlined' means, what it looks like in swimming and its importance. Pupils could re-encounter the word 'streamlined' when taught about the most efficient approach to sprinting in athletics. Intentionally retrieving prior knowledge can prime the pupil for the new learning and make it more likely that they will remember the newer knowledge because of its connection to what they already know. The sequence therefore of what is taught, and when and why, is important in identifying explicitly when key specific vocabulary is encountered, revisited, developed and refined within the taught curriculum to ensure that all pupils develop the knowledge they need to participate in sport and physical activity.

## **The curriculum: extra-curricular activities**

A systematic approach to planning and delivering extra-curricular opportunities should enable pupils to participate beyond their PE lessons, giving them more time to practise, extend and refine their knowledge. [\[footnote 106\]](#) It can also celebrate a variety of different activities, some of which

might not be included in the school PE curriculum. There should therefore be equal opportunities for all to participate.

Extra-curricular provision is not restricted to clubs or activities before or after school hours. It also includes opportunities for pupils to participate in physical activity and sport during breaks and lunchtimes. Graham and others found that the environmental characteristics of a playground at primary level, for example equipment available, organised activities and high-quality adult supervision, can increase pupils' activity levels and influence more participation than areas that are not supervised or organised. [\[footnote 107\]](#)

Take-up of extra-curricular provision can provide a useful indicator of the value of physical activity, PE and sport within the school. Providing all pupils with access to a range of extra-curricular opportunities that punctuate the school day, week and year, in conjunction with a carefully selected and sequenced PE curriculum, can put PE, school sport and physical activity at the heart of the school community.

## Further SEND-specific curriculum thinking

Each section of this PE research review is relevant to all pupils within a mainstream setting. This section, however, provides further research that is specifically focused on pupils with SEND.

A high-quality curriculum in PE is one that meets the needs of all pupils and teaches the knowledge required to participate in physical activity and sport. A curriculum that is ambitious for pupils with SEND will make sure that pupils with SEND have access to content that does not impose an artificial ceiling on what they can achieve.

Pupils with SEND are not a homogenous group. Providing different activities for pupils with SEND without adequate consultation and understanding of their specific needs can predetermine what each pupil can achieve. Pupils themselves can provide much-needed expertise on their own needs. Specific adaptations of content might be required but effective curriculum planning should begin with diverse access arrangements in mind, including for some pupils who might be at earlier stages of movement and/or have less secure knowledge.

Leaders and teachers should plan fully for inclusion and recognise that adaptations might be required for some pupils, rather than begin from a place of fully adapted practice, which might mean that pupils with SEND are subject to lower aspirations. Shields and Synot also highlight the importance of practice and achieving early success for some pupils with SEND and providing opportunities beyond PE lessons to develop the requisite motor and social knowledge pupils need to purposefully engage in PE with enjoyment. [\[footnote 108\]](#)

A study by Dixon and others concluded that pupils with SEND can still face significant exclusion from timetabled PE lessons. It found that some pupils with SEND commonly experience being put in officiating roles, 'setting up cones' and 'holding the stopwatch' within their PE lessons. [\[footnote 109\]](#) They are therefore missing valuable opportunities to learn important knowledge within PE that can enable them to make informed decisions about their own participation in sport and physical activity and lead healthy, active lives.

There must be a clear rationale in place for how pupils with SEND are accessing and progressing within the PE curriculum and careful monitoring of the impact of what might be in place to ensure that all pupils know more and can do more. To champion all pupils in PE, the curriculum must carefully sequence important knowledge and provide the support required to develop increased competency.

### **Based on the above, high-quality PE may have the following features**

- Teachers and leaders recognise that learning takes time. They make sure that pupils have enough time to revisit and develop their knowledge within a context before moving too quickly on to a new sport or physical activity.
- Leaders planning the curriculum are clear that the sport or physical activity being taught matters.
- They select physical activities and sports based on capacity to develop pupils' competence within PE. They use the 3 pillars (motor competence; rules, strategies and tactics; and healthy participation) to help identify key concepts to teach and for pupils to learn and build pupils' understanding incrementally.
- The PE curriculum meets the needs of all pupils. All pupils feel included and able to succeed within the subject.
- The extra-curricular offer is available for all pupils. It provides opportunities to build, develop and refine knowledge and in this way benefits from a symbiotic relationship with the curriculum subject PE.

## **Pedagogy**

In our overview of research underpinning the EIF, we identified teaching as the most important factor in schools' effectiveness. [\[footnote 110\]](#) High-quality teaching in PE enables pupils to remember the intended curriculum in the long term and develop competence. This section highlights the

importance of high-quality instruction, practise and feedback within PE teaching. For each of these integral components, we share the conditions that can prove most beneficial to enable all pupils to know more and do more in PE. This section also draws on important research regarding the positioning of competition within PE teaching and the time spent in lessons being physically active.

## **Instilling a belief that all pupils can know more and do more**

The 'Evidence review' study from Evidence Based Education highlights the importance of creating a supportive environment where pupils do not see their attainment as fixed.<sup>[[footnote 111](#)]</sup> In PE, it is therefore important that pupils see their attainment as incremental and not defined by sex, ethnicity or other personal characteristics. The instruction, practise and feedback that pupils receive within lesson time should enable all pupils to develop their competency, reinforcing the important message that everyone can improve.<sup>[[footnote 112](#)]</sup> This is particularly important for pupils with SEND. These pupils typically participate in less physical activity and a narrowed range of physical activities compared with their peers.<sup>[[footnote 113](#)]</sup>

Learning environments can be more positive and purposeful when all pupils are encouraged to focus on mastery of skills, self-improvement and effort.<sup>[[footnote 114](#)]</sup> Together, these factors can ensure that more pupils learn and achieve success in PE.

## **Expert teacher knowledge**

Expert PE teachers can draw on their own broad-ranging content and pedagogical content knowledge to communicate objectives clearly and organise learning that challenges all pupils to know more and do more.<sup>[[footnote 115](#)]</sup> High levels of subject expertise also enable teachers to identify and predict pupils' common misconceptions and to plan instructions, explanations and tasks to reduce the likelihood of new misconceptions developing.<sup>[[footnote 116](#)]</sup> Iserbyt and others found that teachers who improved their specialised content knowledge increased the number of correct demonstrations, descriptions and analogies/metaphors they used within their teaching.<sup>[[footnote 117](#)]</sup> These features were shown to improve pupils' outcomes, especially for pupils with less prior knowledge.

## **Explicit teaching strategies for novices**

Most pupils in a PE lesson are novices. Even those who might be considered to be high attainers in



particular sports or physical activities will rarely have the prerequisite knowledge to demonstrate high competence across the full PE curriculum. This means that pupils will require clear direction with careful step-by-step instruction, practise and feedback to develop their knowledge. Participation in physical activity alone, with limited guidance, will not enable them to develop complex skills.<sup>[footnote 118]</sup> Similarly, participation in a game cannot guarantee the level of connection pupils need to develop increasingly complex understandings.<sup>[footnote 119]</sup> Instead, direct and explicit teaching approaches, following a detailed curriculum plan, can enable pupils to demonstrate more proficient movement skills and knowledge to become increasingly competent.<sup>[footnote 120]</sup>

Robinson and others found that children who were supported by specialists to learn FMS demonstrated greater increases in their motor competence than children who engaged in free play.<sup>[footnote 121]</sup> At an early stage of movement, there is evidence to suggest that free play alone will not lead to pupils acquiring FMS at a mastery level.<sup>[footnote 122]</sup> This means they will often require structures in place to direct them to learning opportunities that encourage their motivation towards task mastery.<sup>[footnote 123]</sup> Free-play opportunities can be used to complement a structured approach to teaching motor movement. The structured approach should incorporate time for pupils to effortfully practise and refine their knowledge as well as scaffolding and questioning to ensure that their understanding is secure before moving on to more complex content.<sup>[footnote 124]</sup>

Both Dudley and Robinson and others report that well-structured explanations, models, practice time and feedback for all pupils will help to successfully develop their knowledge acquisition and application.<sup>[footnote 125]</sup> Although pupils might encounter and learn additional content on the way, they have a clear purpose for what they are learning.<sup>[footnote 126]</sup> Moving pupils too quickly into games or play situations when they have not yet secured the knowledge they need to access the game or play can be detrimental to their progress and confidence. When pupils have limited knowledge, the problem-solving requirements of an activity can contribute to cognitive overload and pupils can often concentrate, unknowingly, on irrelevant information when making decisions.<sup>[footnote 127]</sup>

As pupils' competency increases and they show that they know more and can do more, teachers' support and scaffolding can be reduced. Teachers can use approaches that encourage pupils to creatively explore problems and seek solutions. For example, they can pose a tactical dilemma and ask pupils to plan, practise and evaluate their own approaches. However, pupils need to practise and be taught domain-specific knowledge (rather than more generic cognitive strategies about, for example, how to problem-solve). They need this in order to develop higher-order processing to make more appropriate decisions and use these forms of practice to the greatest effect.<sup>[footnote 128]</sup>

## The interplay between declarative and procedural knowledge



To enable pupils to accurately connect knowledge that is declarative (know-what) and procedural (know-how), it is important that teachers highlight what pupils have been taught and the particular circumstances to which knowledge is applied.<sup>[footnote 129]</sup> For example, this can be achieved through deconstructing demonstrations using clear and specific success criteria. When demonstrating a push pass in hockey, the teacher might highlight particular features during different repetitions of the demonstration, such as the ball starting in line with the back foot to maximise contact time and the importance of weight transfer to ensure that the ball travels accurately at speed. Here, the teacher is drawing out important and relevant declarative knowledge and explaining its importance to the procedural knowledge – the execution of a pass.

How well pupils demonstrate procedural knowledge of rules, strategies and tactics will be influenced by their motor competence. Some research has indicated that limited motor competence can hinder pupils from acquiring and applying more advanced sport- and physical activity-specific knowledge, including advanced tactics. It is important that pupils have the time to practise to increase fluency in their movement so that they can physically demonstrate how rules, strategies and tactics are enacted. Pupils are more likely to struggle if they cannot effectively execute the necessary motor movements.<sup>[footnote 130]</sup> For example, pupils might be able to clearly verbalise the importance of space in a game. But when they are attempting to show their understanding, if they do not have the motor competence to pass the ball further than a few metres they will struggle to physically demonstrate their knowledge.

## Powerful demonstrations

Specifically modelling what success looks like and providing concrete examples of how knowledge is applied in context is an important part of teaching in PE. Through demonstrations, all pupils can develop a clear picture of what success looks like and focus on working towards it.<sup>[footnote 131]</sup>

For a novice, an accurate demonstration can provide clear representations of the motor pattern for pupils to imitate and compare their actions with.<sup>[footnote 132]</sup> Through the demonstration, pupils can see explicitly the skill-learning process, practising the task, making errors, receiving feedback and improving. This can mean they more readily disregard strategies that are less effective and can spend more time purposefully exploring and refining effective strategies.<sup>[footnote 133]</sup> The requirement to check pupils' understanding through effective questioning plays an important role here to check for misconceptions. Coupled with positive and encouraging use of praise, demonstrations can be an important part of strong pedagogical practice in PE.

For the novice, the process of observing and imitating a demonstration is highly complex. It requires pupils to not only have focused their attention on the most important aspects of the demonstration, but also to reconstruct the representation and make valid judgements on it. It is therefore important that teachers select a small number of the most important cues to signpost pupils' attention. This

will reduce the likelihood of overloading pupils' working memory with unnecessary, distracting information.<sup>[footnote 134]</sup> It can also be useful to use small step-by-step instructions through partial demonstrations, with adequate time to practise before more content is introduced. The pupil's subsequent efforts to replicate the movement or strategy, for example, allow the teacher to identify what the pupil knows and where there might be gaps in knowledge or misconceptions.

Demonstrations can play an important role in explicitly teaching and modelling metacognitive strategies, for example how to monitor and evaluate efforts when pupils practise independently or in groups.<sup>[footnote 135]</sup>

Pupils with more prior knowledge can benefit from observing both expert and novice performers.<sup>[footnote 136]</sup> Through observing the expert, pupils can formulate an ideal movement mental model; observing a novice can help the pupil to detect and correct errors before attempting the action themselves. However, to do this, pupils need secure prior knowledge to ensure that misconceptions from the novice demonstration can be accurately identified and the demonstration appropriately analysed.

Demonstrations play an equally important role for pupils with advanced knowledge. They allow pupils to observe and discuss the presentation of problems and generate possible solutions before engaging in practice, focusing less on imitation and more on innovation.

## **The importance of practice**

Metzler identified a direct relationship between the time pupils spend practising a skill and the learning that occurs.<sup>[footnote 137]</sup> Pupils described as being 'sporty' can often be those who have experienced more and/or higher-quality opportunities to practise in sport and physical activity. This can mean they have more developed and refined domain-specific mental models of how to plan, execute and evaluate participation successfully.<sup>[footnote 138]</sup>

### **Practice should be sequential**

The transition from FMS to the more specialised movement patterns of different sports and activities requires instruction and guidance as well as sequentially designed practice to develop more independent and effective movement in context.<sup>[footnote 139]</sup> Pupils who might have gaps in their learning or misconceptions will need to revisit knowledge before they are introduced to additional further complexity. For example, those pupils who are struggling to perform the basic fundamental movement skills will require additional time to practise these before starting a specific sport or an activity-specific movement. Practising fundamental movement skills and linking them together with increasing competence is not only important in Reception and primary-level PE but also at secondary level too, if appropriate.

Practice episodes should be clearly structured, from simple to complex, and involve adequate time for pupils to practise precisely and with increasing independence.<sup>[footnote 140]</sup> For example, a forward roll in gymnastics might be initially completed with teacher support but, as the pupil develops competence and confidence, scaffolding to support the pupil reduces and the pupil can attempt more complex variations to entering and exiting the roll. Without practising from simple to complex and revisiting prior learning, it is more likely that memories of past performance will fade and pupils will have to relearn rather than revisit.

Not all practice is equally effective. Opportunities to be physically active in PE do not automatically mean that pupils are practising and refining the knowledge required to develop competence.

### **Practising until learned**

The nature of repetition will look different depending on what knowledge is being practised. For example, in swimming, different strokes might be practised and different areas isolated through a series of repetitions to develop fluency in the movements involved. In other activities that require responses to be made to unpredictable external demands, for example team games, the environment is less controlled and so the structure of practice and the role of repetition are different.

Repetition will look less varied during the early stages of knowledge acquisition as pupils gain fluency. However, as competence increases, practice should incrementally increase in difficulty to support pupils becoming more strongly attuned to the unpredictable features of many different specific sports or physical activities.

It is important to not move pupils on too quickly and risk overwhelming them. To avoid this, teachers can carefully change the constraints and contexts of tasks in order to increase their difficulty based on what pupils show they know and can do. This might include making changes to the playing area, equipment, conditions of the activity or number of participants.<sup>[footnote 141]</sup> For example, teachers can vary groundstrokes in tennis from different distances, with a static target, with a moving target and then against an opponent. The action of the groundstroke is being repeated but the context is providing evolving complexity to make the practice continuously 'desirably difficult' for the pupil.<sup>[footnote 142]</sup> The specific progressions need to be carefully planned so that practice is not varied too quickly.

Teachers need to carefully monitor practice, making timely adjustments to practice situations that provide additional support or challenge where required. Younger pupils in particular will need to feel some form of mastery to stay engaged and help inform them of their progress.<sup>[footnote 143]</sup> However, pupils who demonstrate consistent success and not constant success are ready for their practice to become more challenging and are ready to adapt their movement to the increasing demands of the context.<sup>[footnote 144]</sup>

This is not just important for games. Activities such as dance also require practice to incrementally become more challenging. Gibbs and others highlight the important stages of imitation and repetition for novices. [\[footnote 145\]](#) Without time to progressively refine knowledge, pupils will not develop the important bank of movements and ideas required to perform high-quality improvisation that is indicative of competence and confident participation. Setting a task with the expectation that pupils 'be creative' is not a good use of lesson time when the foundational knowledge that they need to exude creativity is not present. For a novice to increase their creative response to a stimulus, they need high-quality instruction, practise and feedback.

## Purposeful feedback

Pupils will benefit from clear and precise feedback that focuses on what they are doing well and how to further develop, and limits any negative comments. [\[footnote 146\]](#) Without a secure mental model with enough connected knowledge to action the feedback they are provided, some forms of feedback during the early stages of knowledge acquisition can be overloading and unhelpful for pupils. This includes feedback that is vague, abstract or too broad.

Pupils with higher levels of prior knowledge can more successfully play an active role in developing their strategies for error correction. [\[footnote 147\]](#) It is therefore important that, as pupils' competency develops, teachers slowly reduce external instructional feedback. For example, pupils with more knowledge within the domain, instead of receiving immediate feedback, can benefit from delayed verbal feedback. The pupils can take time to make their own judgements, drawing from their advanced knowledge, which can then be discussed and corrected or developed with peers, where appropriate, or the teacher.

For pupils with more developed knowledge, too frequent and too detailed feedback can be unhelpful. [\[footnote 148\]](#) It can distract them from processing their own sources of feedback and developing their own broad and rich error-detection systems. [\[footnote 149\]](#)

A key focus of a teacher is to determine what the critical aspects to feed back to the pupil are. Avoiding 'paralysis by analysis' can mean that teachers focus on one or two items to highlight. [\[footnote 150\]](#) Being clear, concise and positive can help pupils to improve quickly without fear of failure. Pupils who are clear about the learning goals and expectations can produce better outputs and are more self-regulated. [\[footnote 151\]](#)

## Time spent being physically active in PE lessons

The Association for PE recommends that pupils actively move for 50% to 80% of the available learning time. [\[footnote 152\]](#) This is as important in key stage 1 as it is in key stage 4. This can usually be achieved through effective planning and organisation of pupils and resources, and making sure that very limited time is spent waiting to participate or to share equipment.

There are some activity choices that lend themselves to higher levels of physical activity, including fitness, invasion games and track athletics. [\[footnote 153\]](#) However, other activities can be more physically active if practices are set up to include more pupils taking part and there is less time spent on transitioning from one activity to the next or waiting to participate.

This is not to say that time being physically active automatically equates to time being actively engaged in appropriate practice. For example, in football practice, pupils doing arm circles while waiting their turn are not receiving optimal practise time because they are not manipulating the ball or thinking about tactics. [\[footnote 154\]](#) Teachers must ensure that physical activity is purposeful and is focused on the intended learning.

Short periods of time not spent being physically active, for example observing a demonstration or participating in a group discussion, can be productive in a PE lesson. [\[footnote 155\]](#) Question and answer episodes, for example, can give the teacher an insight into what each pupil knows and thinks. They can also let pupils ask 'how and why' questions, which can help alleviate possible misconceptions. Furthermore, time spent on clear and concise explanations, analysis and questioning within a lesson will help develop pupils' comprehensive and connected mental models. It will link the declarative and procedural knowledge and will also limit time spent in practice that is not focused on the intended learning. It is therefore important that when pupils are spending short periods not being physically active, they are benefiting from an activity that supports the intended curriculum goal, for example giving structured feedback to active participants.

Hollis and others found in their study, which includes data from the UK, that pupils were involved in moderate to vigorous physical activity for, on average, 40.5% of a lesson. This suggests that, in some cases, more PE time could be dedicated to developing procedural knowledge that engages pupils in purposeful physical activity. [\[footnote 156\]](#)

## **The right competition at the right time**

It is important to carefully consider the purpose of competition within PE, and where and when competition is positioned within PE lessons. During competition, pupils draw on what they know and can remember from within a domain. In many competition formats, pupils use this information to select and respond to a variety of often unpredictable cues, all within what can be a split second.

Pickup and Price clearly explain that competition provides increased pressure and less time to

process information and make decisions about appropriate responses. Therefore, if competition is introduced too soon (before pupils have the prerequisite component knowledge and the competency needed), it can:

- be unsafe
- lack purpose: Bernstein and others found that pupils with limited knowledge did not have as many opportunities to apply skills during game-play
- contribute to pupils' low domain-specific self-efficacy, feelings of exclusion and potential task avoidance [\[footnote 157\]](#)

Competition is effective when strategically planned to provide varying degrees of challenge and not a one-size-fits-all approach. Shields and Funk suggest that true competition is defined as 'a process in which participants seek excellence by trying to surmount the challenge provided by an opponent'. [\[footnote 158\]](#) This requires careful grouping of pupils, but additionally, the challenge provided by competition can be against oneself. Either way, the desired outcomes are about self-improvement.

The way teachers structure competition within lessons is important. [\[footnote 159\]](#) The focus should be on pupils' quality of knowledge application and therefore the task, rather than solely the outcome. [\[footnote 160\]](#)

An emphasis on competitive sport without allocating enough instructional time for pupils to develop the declarative and procedural knowledge needed to successfully participate can marginalise some pupils. This is especially the case for those who are not at a level of competence to access the competition. [\[footnote 161\]](#) Pupils who have limited knowledge and are not at the necessary competence level will be being challenged to do something that they cannot yet achieve. This can ultimately have a detrimental effect on both their competence and confidence. In these cases, too often, the least skilled pupils become uninterested bystanders, with little opportunity for personal improvement. [\[footnote 162\]](#) An important question to consider when planning for competition is: to what extent might competition be helping or hindering learning here?

Competition can play an important role in developing fair-play behaviours and teaching the more hidden aspects of sporting etiquette, including how to win and lose gracefully and how to treat others with respect. It is also important to acknowledge the role that competition plays in stimulating innovation. It adds additional challenge to practice and gives pupils opportunities to refine their knowledge of rules, strategies and tactics. But it is important to recognise that for competition to play this role, it must be accessible to all involved. [\[footnote 163\]](#)

## Further SEND-specific pedagogy thinking



Each section of this PE research review is relevant to all pupils within a mainstream setting. This section, however, provides further research that is specifically focused on pupils with SEND.

All pupils are entitled to lessons in PE that stretch and challenge them. In a study by Goodwin and Watkinson, pupils with SEND described 'good days' and 'bad days'.<sup>[footnote 164]</sup> 'Good days' were when they engaged in learning contexts that had been carefully modified to accommodate their needs and feelings of progression in skill development. On the other hand, 'bad days' were when they experienced social isolation, restricted participation and their competence being questioned.

Several studies have identified that there are gaps in teachers' subject and pedagogical content knowledge. Many PE teachers lack confidence in their knowledge to meet the needs of pupils with SEND, including how to adapt activities to ensure that all pupils participate.<sup>[footnote 165]</sup> With PE providing a different environment to the classroom, some pupils might require different forms of support from that provided in a classroom setting to access the curriculum, including working in smaller groups or there being restrictions on physical contact.

Vickerman and Maher suggest that it is important that provision is made for those with SEND to be included alongside their peers.<sup>[footnote 166]</sup> Where curriculum adaptations are not required and the needs of all pupils can be met through the taught curriculum, the pedagogical approaches selected will play an important role in ensuring that all pupils can access and achieve well in PE. Any modifications required, including adaptations to rules of an activity or modifications to equipment, must maintain educational integrity. For example, in a games activity, a pupil with SEND might benefit from a larger, lighter or different coloured ball to help them complete an accurate movement. Teachers may also need to make some adaptations to rules, such as allowing a pupil with movement restrictions 5 seconds to receive and play the ball.<sup>[footnote 167]</sup> Equally, 'a pupil who requires a wheelchair for mobility can use the chair as an extension of their body' to make use of the space and explore different directions and speeds to demonstrate their procedural knowledge in dance.<sup>[footnote 168]</sup>

Some pupils with SEND might experience delayed motor development or more difficulty when demonstrating FMS. It is important to provide additional practise time and support through frequent and carefully structured tasks and, where required, make sure that these pupils receive support from appropriately trained learning support assistants.

Teachers can make appropriate adaptations and modifications to the pedagogical approaches selected in discussion with individual pupils, as appropriate. They can arrange support in line with any individual education plans. This might include specific support or adaptations to manage the modes of communication in a PE lesson, for example making sure that a pupil with SEND can preview lesson instructions or key vocabulary ahead of the lesson, if needed. This can give them valuable extra time to clarify what the vocabulary means and to practise linking the vocabulary to other key terms they have already learned.

Within PE lesson time, some pupils with SEND share experiences of being unable to join in with certain activities, not having the equipment to participate fully and, at times, missing PE to attend scheduled therapies. [\[footnote 169\]](#) This suggests that there is more to do to ensure that PE is consistently accessible for all and that all pupils can make progress.

### **Based on the above, high-quality PE may have the following features:**

- The pedagogical approaches selected reflect the needs of pupils and the needs of the curriculum content.
- All pupils are supported to know more and do more. All pupils benefit from high-quality instruction, practise and feedback.
- Teaching activities and approaches make sure pupils revisit and re-encounter important knowledge.
- Practice is domain-specific, desirably difficult and goal directed, with the aim of all pupils improving. It gives pupils time to build, develop and refine their knowledge.
- Feedback for pupils focuses on how to improve.
- Pupils have high-quality opportunities to learn component knowledge. Teachers move onto more complex content once pupils have secured important foundational knowledge.
- Competition is appropriately positioned when pupils have the knowledge needed to access the demands of the competition. This is regardless of whether the competition is against oneself or others.
- Pedagogical adaptations for pupils with SEND to access and achieve success are specific to the needs of the pupil and retain educational integrity to meet the aims of the national curriculum.

## **Assessment**

This section emphasises the importance of teachers having ‘assessment literacy’ (defined below) and the role that careful selection of assessment approaches, and inferences made from assessment, plays in PE. Assessment in PE should be tightly focused on what pupils can do and how they can improve. This section also discusses some of the challenges teachers face when selecting approaches and using assessment information to ensure that pupils know more, do more and remember more.



## The importance of assessment literacy

Teachers in PE should use a variety of types of assessment that enable all pupils to demonstrate 'what they know, understand and can do'.<sup>[footnote 170]</sup> If not carefully considered, the approaches selected can play a role in creating and reaffirming inequities and reducing pupils' motivation and self-efficacy.<sup>[footnote 171]</sup> It is equally important to clearly communicate to pupils and other key stakeholders how pupils' strengths and areas for development will be monitored and assessed to ensure that what is valued and needed to increase competence is assessed appropriately.

To make decisions about which assessment practices are most effective, teachers need to have expertise in assessment principles, assessment approaches and how to interpret assessment data to optimise subsequent classroom teaching.<sup>[footnote 172]</sup> Stiggins refers to this as 'teacher assessment literacy'.<sup>[footnote 173]</sup>

Teachers should carefully consider the possible positive, negative, intended and unintended consequences of an assessment task and its outcomes.<sup>[footnote 174]</sup> Without this critically reflective approach to assessment, the commitment to 'PE for all' is unachievable. Assessment approaches for pupils with SEND might need adapting to ensure that all pupils have the opportunity to show what they know and can do and that areas of development can be appropriately identified and feedback given to improve. Similar to any curriculum or pedagogical adaptation, these must not place a ceiling on what pupils with SEND can achieve. Additionally, any adaptations should retain educational integrity.

## Assessment should remain focused on identifying progress in competence

Well-designed assessment enables teachers to gather evidence to plan subsequent teaching that helps pupils to know and do more. Decisions about what and how to assess should be based on value and importance.<sup>[footnote 175]</sup> If made appropriately, these decisions can play a positive role in challenging misconceptions about the purpose of PE and clarify to stakeholders what constitutes 'learning' in PE.

Hay and Penney's research implies that assessment must remain focused on what PE can realistically be held accountable for developing. This can include, for example, the quality of movement execution and the application of knowledge to participate effectively and efficiently in sports and physical activities.

Formative assessment encompasses 'all those activities undertaken by teachers and/or by their

students which provide information to be used as feedback to modify the teaching and learning activities in which they are engaged'.<sup>[footnote 176]</sup> Assessment in this way is not a standalone event – it is ongoing. Pupils should be given frequent opportunities to evidence their understanding.<sup>[footnote 177]</sup> Assessment, therefore, forms an integral part of regular and systematic teaching and learning practice.<sup>[footnote 178]</sup>

The specific content and what teachers are expecting pupils to know and show as a result of teaching should dictate the assessment approaches that they choose. This success criteria should be shared with pupils.<sup>[footnote 179]</sup> For example, teachers might assess important trampolining knowledge through a series of multiple-choice questions. Although not physical, this approach to check pupils' understanding gives teachers a rich insight into what each pupil thinks and how their knowledge is organised. It also allows pupils to receive immediate feedback through dialogue with the teacher, which reduces the likelihood that misconceptions will become embedded.<sup>[footnote 180]</sup>

The physical domain ultimately sits at the heart of what it is to be physically educated. Consequently, much of the knowledge pupils acquire can be demonstrated through physical means, for example playing badminton to show knowledge of how and when different strokes are performed. Formative assessment can be used to identify any underlying misconceptions before pupils move on to learning more complex content.

As a result of assessment, pupils must know specifically what they are doing well and how they can further develop their competence. For example, are they using the correct terminology to describe a warm-up in dance and demonstrating it accurately? If not, then what do they need to do to demonstrate success? This explicit identification will support pupils to organise the knowledge learned and form accurate mental representations of success within each context. It is also important that pupils have adequate time between any assessment to learn and practise the specific components and act on advice or guidance given to improve their competence.

### **Considerate use of competition to assess**

A competitive situation allows pupils to bring their knowledge of a particular domain together. However, competitions (whether against themselves or others) are not the most appropriate method teachers can use to isolate the smaller building blocks that might need to be retaught, revisited or refined.

The information the competition yields can be too broad to meaningfully improve pupils' subsequent efforts. It is more appropriate, for the purposes of informing the next steps in teaching, to check precisely what a pupil knows and can do through carefully designed activities that more finely isolate the components of knowledge required.<sup>[footnote 181]</sup>

Competitions also do not always give pupils the opportunity to show what they know and can do in terms of the range of component elements. This is because the focus of competitions is on outcomes and the outcomes do not always reflect what learning has occurred.<sup>[footnote 182]</sup> For

example, during a basketball game, what a pupil does is informed by the unpredictability of the game. This can mean that if competition is the only form of assessment being used, pupils can be limited by the opportunities that were presented within the game. For some pupils, that might have been a very small sample of the domain.

In some cases, however, competitions can be a useful way of assessing pupils' application of tactics, for example their knowledge of the roles that different positions have in a team activity. When appropriately placed, competitions can also be a useful way of cumulatively assessing pupils' knowledge by incorporating knowledge from previous topics, some of which might supersede knowledge taught earlier. For example, during a cricket match the bowler will choose how to perform the bowl based on the perceived weaknesses of the batter. Their choice might be one they had learned previously, which would provide evidence of knowledge retention.

## Assessment challenges in PE

A study by Borghouts and others found large disparities between what teachers were reporting as their goals of PE and their assessment practices.<sup>[footnote 183]</sup> Other studies have also found a disconnect between the methods of assessment being used and the knowledge pupils are expected to know and apply.<sup>[footnote 184]</sup> Assessment should be closely aligned to specific contexts in order to produce information that can appropriately inform the next steps of teaching.

Assessment that is based on generic skill progression, for example teamwork or resilience, does not adequately give pupils the component knowledge they need to know more and do more. Pupils are likely to be given vague feedback that does not isolate the clear and domain-specific knowledge needed to improve. Furthermore, assessing beyond pupils' competence in PE can lead to teachers distorting their curriculum in unhelpful ways to try to prepare pupils for assessment.

## Performance versus learning

It is important that teachers recognise that observations of physical performance are not always indicative of the underlying quality of learning.<sup>[footnote 185]</sup> For example, the objective measurements of distance thrown in javelin can fluctuate as pupils learn more complex techniques. Until the new movement patterns have been practised and refined, a pupil can feel like they have regressed and may not have a clear understanding of what their assessment information is showing. Incorporating other forms of assessment to complement observations can provide more reliable data to inform pupils' perceptions of what they are doing well and what they need to do to improve.

Moreover, what is observed in practice does not always translate into long-term memory. For example, demonstration of the conventions of a short corner in hockey during a lesson shows that content has been covered but this does not necessarily mean it will be remembered. Especially if

the knowledge is not carefully connected to prior learning. This means that opportunities to recall and review important knowledge need to be carefully planned to ensure that pupils remember it.

### **Maturation can impact motor-competency outcomes**

Some pupils will have different physical advantages in different activities, for example a tall pupil might find increased success when defending in netball. Equally, a taller pupil might jump higher in high jump in athletics. This can have implications for how assessment data is interpreted. It is important that assessment approaches, where appropriate, consider these advantages. Objective measures or outcomes alone can mask a multitude of misconceptions, for example poor replication of movement. Teachers should ensure that their approaches to assessment and the inferences they make from the information they gather focus on what pupils have been taught and find out what pupils need to do to be better.

Rates of maturation have also been shown to influence pupil assessment outcomes in PE. A study by Aune and others found that pupils born in the first half of the year recorded higher levels of achievement in PE compared with those born in the second half.<sup>[footnote 186]</sup> This phenomenon has also been observed in the selection of teams for some sports.<sup>[footnote 187]</sup> This further emphasises the need to select assessment approaches that accurately reflect what it is to get better in PE regardless of maturation. For example, teachers may introduce a long jump competition that records the distance a pupil has jumped relative to their height as well as the absolute distance.

### **Self- and peer-assessment needs to be taught**

There is a place in PE for self- and peer-assessment. Pupils can learn by observing and analysing.<sup>[footnote 188]</sup> However, for pupils to play an effective role in peer- and self-assessment, teachers should share the learning intentions clearly and make sure pupils have an accurate mental model of what success looks like within the specific task or context.

This is especially important where some terminology might be quite abstract. For example, to peer-assess a dance performance where pupils might be asked to comment on the actions they observe within the dance, pupils need to have a mental picture of what it might look like to drift or to tangle, to rise or to melt, so that they can recognise it and comment on it.

Pupils also need to be taught how to assess, to have clear guidelines on what is being assessed and to know how to give feedback. For example, pupils will often require clear and explicit success criteria to refer to. This can ensure that feedback comments are helpful and play a role in improving the quality of efforts.

### **Using technology to support assessment**

There is evidence that technology, including video to analyse movement, can be valuable to support assessment in PE.<sup>[footnote 189]</sup> Pupils who have limited knowledge of accurate movement

patterns can benefit from watching replays and slow-motion techniques to identify successes and improvements. [\[footnote 190\]](#) However, what pupils see and the inferences they make will be framed by their prior knowledge and experience. For video analysis to be purposeful, pupils will need a clear mental picture of what success looks like so that they can make sense of what they are watching. The immediacy with which this can happen can also reduce the likelihood that misconceptions become embedded and detrimentally impact their future efforts.

When technology is used well, it can increase teachers' and pupils' knowledge of successes, reduce misconceptions and clearly 'show' how to improve. However, it is important that any technology used in PE to assess is user-friendly, does not burden teachers with unnecessary complexity and does not detract from instructional time. [\[footnote 191\]](#)

Any use of technology should support assessing what is valued and not valuing what can be assessed. [\[footnote 192\]](#) Where the use of technology creeps into monitoring and tracking, it can affect well-being. Teachers should think critically about the potential risks and benefits of any technology use to support accurate and reliable assessment. [\[footnote 193\]](#)

### **Based on the above, high-quality PE may have the following features:**

- Teachers select the most appropriate assessment approaches to give all pupils opportunities to show what they know, can do and understand.
- Formative assessment is ongoing and provides information that teachers use to inform subsequent teaching.
- Assessment approaches should identify the component knowledge pupils have acquired and have not yet acquired.
- Pupils have a comprehensive understanding of what it is to know more and do more in PE. This is not narrowed to only value performance in specific sports or physical activities.
- The inferences made from assessment data collected are carefully considered alongside other forms of assessment data to provide an accurate picture of what each pupil can do and what they need to do to improve.
- Pupils are explicitly taught how to self- and peer-assess, using clear and precise success criteria to give accurate and meaningful interpretations.
- Teachers using technology to support assessment carefully weigh up the strengths and limitations and the role it plays in providing accurate assessment information that directly relates to improving competence in PE.

## Subject and whole-school policies

High-quality PE depends on effective subject and school leadership. This section shares the research relating to PE subject leadership and continuous professional development (CPD). It draws on important features of the primary school sector, including PE and sport premium funding and the increased outsourcing of PE.

### Subject leadership

Effective leadership creates the conditions under which teachers can be successful. It is useful to consider Silva and others' '3 waves of teacher leadership' to navigate the duties carried out by PE leaders, which vary widely in each context.<sup>[footnote 194]</sup>

- The first wave involves mainly organisational tasks that focus on the operational aspects of schooling.
- The second wave involves using the instructional expertise of teachers.
- The third wave involves developing a culture of collaboration and CPD that places teacher development at the heart of improving pupils' attainment.

It is important that subject leaders are given the time required to actively engage in important subject matters, namely curriculum design, monitoring and staff training and support. It is through effective subject leadership that an ambitious curriculum is brought to life.

### Primary school PE: increased outsourcing

Historically, PE has typically not been taught by subject specialists in primary schools. Following the introduction of the primary PE and sport premium in 2013, however, there has been an increase in the number of schools with a specialist PE teacher: from 30% before the premium to 46% in 2014/15.<sup>[footnote 195]</sup> More recently, Jones and Green suggest that primary PE is typically taught by one or a combination of 3 different groups: generalist teachers, specialist primary PE teachers and sports coaches.<sup>[footnote 196]</sup>

With the growth of outsourcing in PE, teachers in primary schools are no longer the sole providers of the subject.<sup>[footnote 197]</sup> In some schools, outsourcing provision has become an appealing solution to deal with teachers' lack of subject knowledge and/or confidence.<sup>[footnote 198]</sup> There is



some evidence to suggest that external providers in PE provide higher-quality planning, instruction and management of activities, and that they better develop pupils' motor skills compared with generalist teachers. [\[footnote 199\]](#)

Specialists can play an important role in the long-term development of primary PE, through increasing generalist class teachers' subject knowledge and understanding of pupils' technical movement. [\[footnote 200\]](#) They can also extend opportunities to be physically active and develop competency beyond timetabled PE. However, having a specialist does not guarantee a high-quality PE programme. [\[footnote 201\]](#)

The research on using external providers does not always make clear what is meant by 'expert' or 'expertise'. [\[footnote 202\]](#) Expertise can be very specific, and a lack of wider curricular expertise to align what is taught with a high-quality progression model can limit pupils' progression. Further research implies that pupils' PE experience can be reduced to sport and moves away from the aims of PE. [\[footnote 203\]](#) Schools must explicitly avoid narrowing the curriculum in this way, including not having PE dictated by intra- or inter-school competitions. [\[footnote 204\]](#)

It is equally important that any commercially bought programmes are critically reviewed by subject leaders within school to ensure the high-quality instruction, practise and feedback required to develop competence. Furthermore, the consistent quality of implementation must be monitored to secure positive outcomes for all pupils.

Overall, very little is currently known about the impact of outsourcing on pupils' understanding of PE. [\[footnote 205\]](#) It might be that at present the role of external providers is best placed in extending and supplementing, rather than replacing or substituting, internal provision. [\[footnote 206\]](#)

The school must retain robust monitoring of the intended and enacted curriculum. Outsourcing might risk PE becoming disconnected from the wider culture and context of the school if its planning and implementation is left solely to external providers. [\[footnote 207\]](#) If these external providers are leading certain PE lessons, leaders must expect teachers and learning assistants to do more than observe. [\[footnote 208\]](#) If teachers are to benefit from the external provider, they need to be actively involved in providing instruction, supporting practice and feeding back to pupils. Likewise, trainee teachers of PE on a school placement need to be able to develop their knowledge and understanding beyond observed practice alone. A study by Randall and Griggs found that nearly 50% of pre-service primary school teachers had no opportunity to teach PE, largely due to curriculum outsourcing. [\[footnote 209\]](#) Trainee teachers need to be given opportunities to develop and apply their knowledge of planning and delivering inclusive lessons. [\[footnote 210\]](#) A further study highlighted that some trainee primary school teachers had no opportunity to teach PE because planning, preparation and assessment (PPA) time was timetabled during PE lessons. [\[footnote 211\]](#) Without these important opportunities, their own gaps in knowledge and misunderstandings can be left unchallenged and negatively impact the high-quality PE that all pupils are entitled to.

The Department for Education explains how schools should use the primary PE and sport premium

funding ‘to make additional and sustainable improvements to the quality of PE and sport [they] offer’. A recent survey reported that almost 90% of respondents felt that the confidence, knowledge and/or skills that staff had in teaching PE had increased a little or a lot as a result of the funding. [\[footnote 212\]](#) However, our 2018 report found that some schools were using the funding in ways that did not follow the guidance, such as to fund planning, preparation and assessment cover. [\[footnote 213\]](#) These schools therefore miss important opportunities to develop teachers’ skills and confidence in teaching PE. [\[footnote 214\]](#)

The funding has been in place now for over 8 years and it is still unclear what precise and sustained positive effect it is having on teachers’ expertise and pupils’ outcomes in PE. The EIF allows inspectors to focus on the impact the funding has on leaders’ and teachers’ expertise and wider developmental opportunities within the school.

## Effective CPD

For CPD to improve teachers’ effectiveness in PE, it is important that leaders at different levels within the school recognise their role in fostering positive relationships and engagement with professional learning opportunities. [\[footnote 215\]](#) Leaders with a sufficiently developed understanding of the PE curriculum can support curricular decision-making and ensure that CPD is carefully embedded within the subject to allow teachers to develop, discuss and debate the content of the subject and how to teach it.

CPD should not be a bolt-on activity. It should be ongoing and sustained. [\[footnote 216\]](#) It should bridge research and practice and specifically relate to the career point and experience of a teacher. In order to do this, CPD should be planned with clear and specific goals and should identify the types of evidence that best demonstrate achievement of those goals. [\[footnote 217\]](#)

Despite the launch of the PE and sport premium in 2013, research has noted that even if a primary school teacher views themselves as confident in teaching PE, often they are only confident teaching a small selection of activities. [\[footnote 218\]](#) Our research from 2018 found that teachers’ confidence improved as a result of specialist training in particular physical activities, for example gymnastics and dance. [\[footnote 219\]](#) Notably, training and support that focuses on teachers accurately identifying pupils’ strengths and areas for development within a context and having the knowledge of appropriate and progressive instructional tasks and practices can improve pupils’ outcomes. [\[footnote 220\]](#)

Decisions about what teachers’ CPD needs are should be informed by careful auditing because teachers themselves can be uncertain about their competence within an activity and their ability to teach it. [\[footnote 221\]](#) This has been highlighted in research on health-related knowledge, which found that staff were less likely to engage with CPD related to health and lifelong physical activity when



they exhibited misguided high confidence. [\[footnote 222\]](#)

## Types of effective CPD and key focuses

CPD programmes that include delivering and developing content and pedagogical knowledge through information sessions and in-class mentoring can be more effective for generalist primary school teachers of PE. [\[footnote 223\]](#) Other studies have highlighted the value that PE teachers place on regular learning in informal networks or communities, which could also be particularly beneficial for small schools. [\[footnote 224\]](#)

To develop a curriculum with appropriate scope, coherence and sequencing, teachers need high levels of subject knowledge. In particular for PE, this includes a detailed knowledge and understanding of the potential impact of motor and coordination difficulties on classroom behaviour and performance. [\[footnote 225\]](#) Eddy and others found that approximately a quarter of primary school teachers surveyed indicated low or no perceived knowledge of FMS. [\[footnote 226\]](#) Further research has identified that teachers need more training to teach object-control FMS. [\[footnote 227\]](#) This knowledge is equally important for secondary school teachers, who might need to make adaptations for pupils who demonstrate misconceptions or gaps in knowledge.

Effective cross-school support can also include sharing the knowledge of experienced teachers of PE in special schools with PE teachers in mainstream settings. [\[footnote 228\]](#) Additionally, cross-phase and cross-school CPD between primary and secondary school teachers could also be mutually beneficial in supporting ambitious and inclusive curriculums.

## Further SEND-specific subject policy thinking

Each section of this PE research review is relevant to all pupils within a mainstream setting. This section, however, provides further research that is specifically focused on pupils with SEND.

Despite policy developments related to SEND provision, some research suggests that little has changed in teachers' confidence to specifically include pupils with SEND in PE, while other research suggests that some changes for the better are taking place. [\[footnote 229\]](#) Dixon and others suggest that schools still need more effective mentoring of staff, including support staff whose roles include working with pupils with SEND in a PE context. [\[footnote 230\]](#) This could include translating individual education plans into PE settings effectively and subject support for special educational needs coordinators who take part in forming and implementing an inclusive PE curriculum. [\[footnote 231\]](#)

**Based on the above, high-quality PE may have the following features:**

- Teachers of PE have high levels of subject knowledge and pedagogical knowledge.
- Teachers of PE and relevant support staff benefit from subject-specific specialist training.
- Any external specialist support is well aligned with the curriculum vision of the school, as part of a carefully sequenced curriculum that enables pupils to cumulatively know and do more.
- School leaders have responsibility for the PE curriculum in place at their school.
- Teachers are actively engaged in what has been taught before and what will be taught after their age group of teaching. They use this knowledge to inform their selection of content, sequencing and ambitious end points for all pupils.
- Teachers are highly trained in meeting the needs of all pupils, including pupils with specific SEND within a mainstream setting.

## Conclusion

If PE is to truly physically educate all pupils, the curriculum must take pupils beyond their own experiences. It should develop their knowledge of motor competence, rules, strategies and tactics, and healthy participation in order to meet the aims of the national curriculum. Pupils who lack this knowledge, and lack structure to their knowledge, are denied the opportunity to develop competency and to flourish in and beyond PE lessons.

Pupils are best able to learn more and do more in PE when they have access to high-quality instruction, practise and feedback. Practice time needs to sufficiently support developing competence; it needs to be challenging and it needs to provide the opportunity to revisit, refine and develop knowledge. To do this, teachers need to carefully consider the number of sports and physical activities that pupils are taught. They should focus on balancing breadth with depth so that pupils become more competent and confident and so that the curriculum does not become 'a mile wide and an inch thick'. Assessment needs to explicitly check pupils' understanding of the component knowledge needed to develop competence and, where appropriate, adapt subsequent teaching to reduce the likelihood of gaps in knowledge developing or misconceptions becoming embedded. Furthermore, teaching approaches need to carefully align both to the needs of the pupils and the needs of the curriculum.

Without the important building blocks of efficient, intelligent and healthy participation, pupils can be limited in the choices they have to engage in the world of sport and physical activity. PE is not for

some; it is for everyone.

PE is not without its complexities within each school. Schools that have a culture of championing PE (and the complementary role of the wider extra-curricular offer) can help all pupils to be their best, and can even rewrite pupils' futures in terms of their lifelong engagement with, and enjoyment of, sport and physical activity.

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