

CHAPTER

2

PHYSICAL COMPETENCE, PHYSICAL LITERACY AND CREATIVITY

INTRODUCTION

One significant outcome of effective and creative teaching and learning of Physical Education in the primary school is that learners continually enhance their *physical literacy*. In this chapter, we consider first the physical and movement development of young children and the importance of optimum early achievement of physical competence as they progress into the later years in primary school and beyond. This will include key aspects of physical, neuromotor, sensorimotor, movement and language development. We then examine the definition, domains and attributes of the concept of physical literacy and the implications of these for young people as they embark on their lifelong physical literacy journey. Finally, we explore the concept of creativity as closely related to physical literacy and consider the potential for enhancing creativity whilst simultaneously developing the domains and attributes.

KEY ASPECTS

A key element of physical literacy is the development of physical competence. This can be greatly facilitated by enabling children to capitalise on their physical endowment during their early years. Keen (1993: 6) reminds us that 'the human body is built for motion' and is 'designed for efficiency in movement'. Efficiency in movement is dependent upon the optimum integration of muscles and joints. Muscles, which account for 40 per cent of adult mass, provide the means of propulsion, allow us to accelerate and decelerate, and also act as shock absorbers. Keen (1993) goes on to state that for this to be continually managed, a large proportion of the brain is dedicated to achieving gross and fine motor coordination and balance.

Neuromotor development

This can be defined as the relationship between the brain, the nervous system and the muscular system through which movement is facilitated when impulses from nerve fibres pass into muscle fibres. Neuromotor activity is also responsible for

the integration of the primitive reflexes that are present at birth and which, if not inhibited in infancy, can lead to motor control problems later in childhood. These include, for example, poor posture in standing and sitting; inability to keep still; poor hand-eye coordination; poor judgement of the speed, power and timing of approaching objects; tracking the path of objects; copying; and poor integration and coordination of the upper and lower sections of the body in movement, as, for example, in swimming (Goddard Blythe, 2005: 51). Neuromotor control also involves a series of other systems, including the vestibular, somatosensory and proprioceptive. The vestibular system is responsible for the body's ability to relate to gravity and to manage the speed and direction of movement; the proprioceptive system is influential in control of posture; and the somatosensory system deals with sensation on the skin. Together, these systems provide information to the brain to orchestrate coordination, body awareness and the relationship of one body part to another. The complex interplay of the elements of neuromotor control develops progressively in physically active infants and preschoolers. However, recent research (Goddard Blythe, 2012) suggests that many children are seriously delayed in neuromotor development and that this delay interferes with their overall development and their progress in all areas of learning once they start school.

Sensorimotor development

At birth, the brain, which is made up of billions of cells that are not yet connected to each other, is highly active. Cell connections start in the sensorimotor area, at the base of the brain. Feeling and moving are key factors in sensorimotor development, and sensorimotor development underpins all other areas of brain development. For the essential neural connections to take place in the brain, the cells need to be stimulated. Physical activity is the key stimulus to neural connection. Physical activity is thus the crucial stimulus to brain development in the early years and to brain maintenance throughout life. Ratey and Hagerman (2008: 4, 245) state that 'exercise cues the building blocks of learning in the brain' and exercise is 'the single most powerful tool to optimise brain function'. They also remind us that 'to keep our brains at peak performance, our bodies need to work hard'. Furthermore, Daniel Wolpert (2012: 35) asserts that although we may claim the function of the brain is to enable us to perceive the world, the reason we have a brain is to produce adaptable and complex movements; 'movement is the only way we have to affect the world around us'. He also reminds us that while sensory, memory and cognitive processes are all important, they are only so because they either drive or suppress future movements.

Cephalo-caudal and proximo-distal development

These two processes dictate the sequence of physical and movement development in infants. Cephalo-caudal development is the 'top-downwards' development, from the head, towards the feet, whereby the upper body increases in strength and control before the lower limbs, with the ankles and feet being the last to mature in

this sequence. Evidence for this is the development of locomotion from lying, to sitting, to standing and finally, when the legs have gained sufficient strength, to walking. Proximo-distal development proceeds from the more central parts of the body outwards. At birth, the central parts of the body are highly active, including the nervous, circulatory, respiratory, digestive and excretory systems. By contrast, there is little evidence of control in the more distal body parts. For example, several years elapse between the apparently indiscriminate flailing of the arms from the shoulders, in early infancy, to the later controlled use of the hands and fingers as in mastering the ability, for example, to tap out text messages at high speed. Successful cephalo-caudal and proximo-distal developments are essential both for complete sensorimotor development and for the achievement of physical competence. Ratey and Hagerman (2008: 3) assert that 'we are born movers' and suggest that we are 'at peril of dulling the brains of the next generation' if we fail to ensure that every young child continually builds on his or her physical competence birthright through frequent physically active play.

Physically active play should include weight-bearing activities such as balancing, running, jumping, rolling, climbing and swinging, which work the large body muscles, help to strengthen the muscular and cardio-respiratory systems, underpin control in fine motor functioning and build an extensive movement vocabulary. Frequent gross motor activity, such as the examples above, is vital for the efficient development of fine motor control. Children who experience difficulty in managing tools, for example, in order to write, may well lack sufficient strength in the wrist and hand. Increasing gross motor activity, especially involving the whole arm from the shoulders, as in climbing, hanging, swinging, swimming, digging or controlling the steering of a balance bike and other wheeled toys, provides additional preparation for supporting the development of fine motor control. As Hoeger and Hoeger (1993: 148) argue, 'movement and physical activity are basic functions for which the human organism was created'. Physical activity is thus paramount for the optimum development of both the brain and the achievement of well-coordinated and controlled movement competence, thereby enabling increasing access for children in relation to all that they do.

Play

In Chapter 1, we drew on Chazen's (cited in Wood and Attfield, 2002: 198) all-encompassing definition of play and discussed the importance of *purpose as valuing purposeful physical exploration and meaning-making*. We argued that this is a core feature of a creative approach in Physical Education. Here, we continue to develop our argument for *valuing purposeful physical exploration and meaning-making* in relation to play. By the time children start school, they will have experienced more than 4 years of play; Vygotsky (cited in Singer and Singer, 2005) suggests that the act of play extends far beyond the recreational factor, and, indeed, play for children could be seen as the equivalent of work for adults. Play enables children to learn many skills beyond movement competence, such as decision-making, turn-taking, language acquisition and social interaction. The British Heart Foundation (2013) suggests that a rich play experience should include four types of play, namely

'unstructured' or 'free' play, 'child-initiated' play, 'focused learning' play, and play involving 'highly structured physical activities'. Free play is defined by Adrian Voce (2006: 2) as 'freely chosen, personally directed, intrinsically motivated behaviour and without adult intervention'. In child-initiated play, significant others such as playmates, peers, older children, parents and other adults can extend children's learning by adding stimulus, and offering support, encouragement, feedback and modelling, and can contribute richness to the development of children's communication skills. Focused learning play is initiated by an adult, with the child then taking over while the adult observes, prompts, gives feedback, guides and facilitates the child's discoveries and development. Play involving structured physical activities in more formal settings is pre-planned with learning outcomes designed to engage with children's needs. Ideally, this should further facilitate the provision of breadth, variety and richness within children's play experiences, increasing movement vocabulary and language mastery.

Singer and Singer (2005) suggest that play provides for creativity and spontaneity, poses problem-solving opportunities and promotes intellectual growth. However, free play as the sole play opportunity, without any adult interaction, is not sufficient. Children are normally naturally active, energetic and inquisitive, physically competent, wide-ranging and self-challenging in their play and greatly benefit from teacher observation, support and challenge, as appropriate. The limitations of free play can leave children constrained within the boundaries of their own experience and by the absence of further stimulus to develop their creative play. A sufficient play experience is best achieved through a mixture of unstructured play, child-initiated play, focused learning and through the incorporation of structured physical activities both in preschool and in school settings.

Scenario

Jack started his experience on wheels with a tricycle at the age of 2, such that, when offered a 'balance bike', he was initially not very impressed! Pedalling to go along on a stable vehicle was fine but balancing on an unstable one was not! He found it a challenge to establish and maintain postural control in order to keep the bike upright while getting onto it and holding a sitting position. However, a few weeks later, after repeated trials and the encouragement of his enthusiastic parents, he found that he could balance, holding the handlebars and sitting on the saddle with his feet on the floor. Jack was not one to give up on a new toy, so it was not long before he started to walk along on the bike. Once outdoors, walking led to striding. Striding led to taking his feet off the ground momentarily and putting them back down to stop, in order to straighten the bike up again or to turn around. Jack is now a great balance bike rider, able to get on, start, walk, run, lift his feet off the ground, glide along and put his feet back down to stop with control. By the age of 3, he was also creating his own journeys along the paths in the local park and chatting about what he was doing.



■ **Figure 2.1** Striding Jack

What can we observe and surmise about Jack's physical competence by comparing the two photographs (Figures 2.1 and 2.2)? He has developed in terms of postural control, locomotion, and static and dynamic balance; he has probably had lots of exercise; he has gained knowledge of how to handle the bike; and he seems to have the motivation and determination to persist with the challenge and looks as if he is confident and enjoying himself. What might we expect Jack to be able to do in the future? Having established the fundamental movement capacity of 'balance', he might go on to develop other specialised cycling skills or to look for other opportunities to discover how well he can balance. However, Jack's early cycling opportunities are not those that are experienced by all 21st-century children. However, Balanceability (AfPE, 2020) has much to help young children through their balance bike programme.

Children with Developmental Co-ordination Disorder, neuromotor delay and immature motor skills often experience difficulty in postural control and in planning and executing smooth co-ordinated movements. Delays such as these, in the physical domain, may also affect their progress in the cognitive and affective domains. Infants who lacked sufficient free play and tummy time or who spent significant free play time constrained in buggies, beanbags or rockers or who develop into 'couch potato' children with sedentary lifestyles, may also limit the progress of their physical literacy journey.

Such concerns about inactive young children have led the British Heart Foundation (2012, www.bhf.org.uk) to publish Physical Activity Guidelines.



■ **Figure 2.2** Riding Jack

Relating to inactivity, Goddard Blythe (2012) concludes, in the results of her research, that a significant percentage of children are starting school with immature motor skills and with postural instability. She notes that there is a direct correlation between immature motor skills and educational achievement and states that neuromotor immaturity is a barrier to learning. For example, if children need to give conscious attention to their standing and sitting posture and to trying to control involuntary disturbances in their movement, the demands placed on their ability to concentrate on their learning in class is seriously disrupted. Young children who are seen to be fidgeting and are asked to sit still may be needing to give all their attention just to the task of sitting still, such that if they also try to give attention to the learning activity, they are unable to do both.

This condition can have a profound effect on children's ability to participate in many aspects of Physical Education, especially manipulative activities such as games when they have to select and apply specific movements in a group or team setting, in a constantly changing environment. Competitive activity, which calls for quick decision-making, with little time to plan an appropriate movement response, may prove to be an impossible challenge. However, when provided with appropriate resources, and opportunities to explore and progressively acquire single skills, without peer pressure, children can all be successful and enjoy a rewarding experience. They can amass a wide movement vocabulary alongside their peers and

can develop movement memory and movement quality. Fortunately, educators are increasingly aware and alert to challenges such as these, and some school settings screen children in movement ability, balance and postural control, and give support sessions focusing on all aspects of physical literacy. In her longitudinal study of 15,000 children born in 2000 and 2001, with results published in 2010, Goddard Blythe (2012) found that children who failed at 9 months to reach four key gross motor development milestones of sitting, crawling, standing and practising taking first steps were found to be behind in ability tests at 5 years of age. She also found that delay in gross and fine motor development in a child's first year was significantly associated with cognitive development and behavioural adjustment at age 5. Furthermore, Campbell (2013) reported that thousands of children aged 11 years started secondary school not able to throw a ball, catch, jump or run. Maximum free play, with minimum movement constraint in infancy, along with a strong focus on developing physical competence and opportunities for creative learning in the Early Years and Key Stages 1 and 2 can help to ensure optimum progress in physical competences and literacy.

Language and movement

Movement vocabulary is to movement as the dictionary is to the spoken and written vocabulary of words. There are millions of movements that are capable of human performance, and it is the responsibility of all movement facilitators to enable young children continually to increase their repertoire of movements, in building both a rich movement vocabulary and a rich vocabulary of spoken words with which to communicate about movement. Exploring and developing movement patterns can form the focus of teaching and learning with young children. Table 2.1 includes a series of fundamental movement categories, namely balance, locomotion, flight, manipulation, projection, construction and non-verbal communication. By allocating individual movements to named categories, it is possible to cluster related movements.

Young children bring to their movement and language learning extensive tacit knowledge. Tacit knowledge (or habitual movement) is that which is employed as we move, but that which we cannot readily verbalise, because it is pre-reflective; an adult example is that of driving a car. Much of the ability to achieve both the massive range of movements and the fast-paced decisions required to control the vehicle, negotiate other traffic and obey the rules of the road is internalised rather than explicit. Nevertheless, for young children, the significance of language acquisition through moving cannot be underestimated. We therefore turn our attention now to the development of language through movement and the development of movement through language. Kiphard (1995) reminds us that 'movement is a child's first language', and 'movement is the first medium of expression of the physical and emotional condition of an individual'. Asher (1983: 3) states that 'children decode language through the intimate integration and subsequent relationship of language and bodily movement'. Earliest forms of communication are non-verbal and are also highly significant

Table 2.1 Some examples of movement vocabulary

Balance – vocabulary to enhance stable support and postural control

on front	on back	on side	on seat	on hands and feet	on hands and knees
on knees	on feet	on one hand and one foot	on one foot	sliding	upside down, as in handstand
on elevated, wide and narrow surface	rocking	scooting	biking	floating	on unstable base

Locomotion – vocabulary to enhance travel from place to place

creeping	slithering	crawling	stepping	walking	gliding
trotting	jogging	running	dodging	pouncing	rolling
hopping along	skipping	galloping	bunny jumping along	cartwheeling	
pulling	pushing	swinging	climbing	wading	swimming

Flight – vocabulary to enhance projecting oneself off the ground and back down to land

landing on two feet	taking off	jumping up	jumping along	jumping onto two feet	
jumping around	jumping off	jumping over	jumping with turn	taking off on one foot	
landing on one foot	hopping	hopscotch	leaping	assisted flight	abseiling

Manipulation

holding	feeling	grasping	gripping	drawing	tracing
guiding	cutting	dressing	threading	tying	pressing
releasing	moulding	picking up	putting down	typing	texting
receiving a rolled object	receiving a thrown object	computer-mouse management	writing		

Projection

placing	rolling	bouncing	throwing	striking	heading
aiming	kicking	punting	volleying	flicking	flinging
spinning	skimming	serving	driving	putting	goal shooting

Construction

grasping	picking up	lifting	carrying	arranging	assembling
adjusting	stacking	building	dismantling	storing	

Communication (non-verbal)

pointing	waving	clapping	smiling	frowning	leaning
bowing	curtsying	turning towards	turning away	nodding	shrugging

in facilitating the conveying of messages from the infant to the carer(s), and vice versa. Bee (2010: 205) suggests that in the *prelinguistic phase*, 'babies successfully use gestures and body language in consistent ways to communicate meaning'. Evidence includes facial communication, as in smiling, pointing and waving to say goodbye. This early use of gestures, often acquired from copying those used by carers, introduces the skills of observing and translating observation into bodily actions. These important skills can then be extended and developed by teachers within the Physical Education curriculum.

Enabling language learning through movement

MacIntyre (2000: 8) argues that 'the spoken word includes body language which that enables it to be readily assimilated'. Body language remains an influential factor in learning language through movement, so in acquiring language, young children readily relate to the vocabulary used by their carers and the language system that they are exposed to on a daily basis. Typically, this is vocabulary associated with movement, including:

- nouns, especially those used to name parts of the body, such as hands, feet, elbows, knees; familiar locations, such as chair, floor, step; and manipulative resources, such as ball, bat, bike;
- verbs, such as lie, sit, stand, clap, point;
- adverbs, such as quickly, slowly, steadily;
- spatial vocabulary, such as up, down, behind, over, under; and
- short phrases, such as 'clap hands', 'lie down', 'roll ball'.

Dean and Goss (cited in Guildenhuys, 1996: 14) claim that 'movement-based learning has the capacity to generate empowering environments for the learning of language'. Similarly, Bruner (1983: 23) states that 'movement based interactions provide an environment in which the learner is immersed in understandable messages, where language can be placed in context naturally and meaningfully'. This is further supported by Hopper, Grey and Maude (2000: 91), where they suggest that 'translating movements into spoken language in a variety of contexts offers a treasure chest of descriptive, directional and action words for children to explore, experience and use'.

Enabling movement learning through language

Movement learning through language has the potential for ready assimilation, as Asher (1983: 4) supports: 'language is orchestrated to the choreography of the human body'. However, it is important to note that learning movement through language depends on the quality of the language used. McIntyre (2010: 14), in discussing the *principles of lucidity*, suggests that lucid speaking is highly explicit, using:

the same word or phrase for the same things ... and different words or phrases for different things ... Lucidity enables context to be built before new points are introduced ... Lucidity accelerates perceptual processing, pruning the

enormous combinatorial tree of possible internal models in the listener's brain as quickly as possible, ahead of conscious thought.

This is of paramount importance in providing verbal explanations of movement, in order to minimise intervention in the movement experience by maximising speed of comprehension of the intended movement response. For example, choice of accurate vocabulary speeds up processing response time, as it precludes the need to translate the spoken word before applying it to movement. A common example of this is asking children to 'point their toes', when the intended movement outcome is to 'extend the ankles', since it is the muscles around the ankle that are required to initiate and perform the movement, and, therefore, the neural messages need to go to the receptors in the ankle, rather than to those in the toes. In a different example, confusion in movement response can arise where a non-specific term is used, such as 'roly-poly' or 'somersault', when tasking children to roll, rather than employing the technical vocabulary for rolling, such as roll sideways, roll forwards or roll backwards. Here, the principle of *clarity* should be applied, so that learners can interpret specific tasks by applying known technical terms to named activities. Robert Stenwell (cited in Gladwell, 2008) refers to *practical intelligence* in effective communication, which he suggests includes knowing what to say to whom and knowing how to say it for maximum effect. In movement learning, the choice of vocabulary and content of the language used in a task setting should be both succinct and positive. For example, if the intended movement response to an instruction is not to run, it is preferable to say 'walk', since to say 'don't run' almost inevitably results in running, as the last word heard was 'run'.

The integration of language and movement, whether through learning to move or moving to learn, is a rich source of successful movement and cognitive development in young children, and is a key fundamental contributor to physical literacy. During the previous chapter, we suggested that rich learning experiences can enable learners to make progress in their physical literacy journey (Whitehead, 2010: 11–12). It is worth referring to the current definition of physical literacy, below and also recalling the three domains, namely physical, affective and cognitive:

As appropriate to each individual, physical literacy can be described as the motivation, confidence, physical competence, knowledge and understanding to value and take responsibility for engaging in physical activity for life.
(Whitehead, 2019)

Physical literacy should not be viewed as an end product to be aspired to, but rather a state in which we live throughout our lives. We are all, to a greater or lesser extent, physically literate and our physical literacy is influenced by our endowment at birth, our early upbringing opportunities and our subsequent lifestyle choices. Each child is continually travelling along his or her own physical literacy journey. It is therefore all the more important that children's physical literacy is nurtured from their earliest days, enabling them to capitalise on and enhance, rather than suppress, their movement competence, confidence and motivation, and enable them to increase

their knowledge and understanding of movement and develop their commitment to ongoing physical activity. We argue that one of the key aspects to optimum physical literacy is the attainment of optimum physical competence. To achieve maximum physical competence, infants and young children should engage in physically active play for the greater part of the waking day, in short bouts, with appropriate rests, playing alone, alongside other children, and with the supportive and developmental participation of family members and carers. Both the neuromotor and sensorimotor systems develop exponentially as a result of maximising active play, of limiting sedentary activity to just that which is essential for healthy growth and through the promotion of frequent active play throughout childhood.

Motivation to be physically active determines, to a large extent, the possibility of achieving optimum physical competence, whilst confidence provides the boost to keep active. Most infants strive to move in order to explore the world around them through trial and error, determination and drive to reach new goals, practice and repetition, and these are all evidence of the motivation to succeed and to discovering that success breeds success. All the more detrimental, then, is a situation in which a child loses motivation and shies away from physical activity. This may be due to loss of confidence, feelings of poor self-image, seeming lack of success, loss of enjoyment and satisfaction, and feelings of inability to achieve. It is worth exploring how such negative situations could occur, if a loving, positive, supportive and stimulating environment surrounds the child.

In discussion with trainee primary school teachers about their motivation and loss of motivation, confidence and lack of confidence to participate in Physical Education during their own primary school years, they cited positive experiences that influenced their motivation and confidence as:

- 'It was great to be out of the classroom, getting good exercise'
- 'I had knowledgeable teachers'
- 'We got positive and supportive feedback'
- 'The teacher showed respect for us all'
- 'I was not good at PE, but the teacher encouraged me and gave me confidence'
- 'I was best at PE, so always had a very good report'
- 'Learning in PE was fun'
- 'We tried a variety of activities and discovered what we could do'

Negative experiences cited were almost exclusively not about the subject matter of Physical Education, nor about becoming physically educated or physically literate, but related to issues around organisation, management and administration, such as:

- 'the crowded and impersonal routine for changing clothes'
- 'getting cold outdoors'
- 'having to work in bare feet on dirty floors'
- 'standing around with nothing to do'
- 'being picked last for teams'
- 'being watched doing things badly'

Negative issues such as these can be addressed and overcome at the school planning stage and through effective initial and continuing professional development. Taking account of each learner's individual needs, fostering a 'can-do' attitude, valuing effort as well as achievement, and providing access to positive outcomes can go a long way to helping all to maintain a desire and determination to participate in physical activity and build an active lifestyle.

Referring back to the attributes of physical literacy, young learners who are making progress in their early physical literacy journey will be working towards achieving the attributes contained within the three domains and cited in Chapter 1, thereby enabling them to contribute to the quality of their lives. First, within the affective domain, learners want to take part and have confidence to take part in a variety of different physical activities. Second, within the physical domain, increasing physical competence enables learners to move efficiently and effectively, with awareness of their movement needs and possibilities and with the ability to work alone and with others. Third, within the cognitive domain, as children gain physical competence, they come to know how to improve their performance and come to know and understand how physical activity can improve their well-being. They can also develop the self-confidence to plan and effect a physically active lifestyle. (Whitehead, 2019: 10)

Let us take a moment to make connections here to the POWER principles that were introduced in Chapter 1. Throughout childhood, provision of *purpose* and *opportunities* are key in developing awareness of *well-being* in the promotion of physical competence and physical literacy. Through indoor and outdoor *environments*, enriched with appropriate resources, natural, manufactured and with play partners, both adults and children, learners can *revel* in celebration of physical success, achievement and progression. In early childhood, clear indoor spaces in the home enable children to move independently and safely in their explorations and to move with greater finesse and control as they mature. Maximising opportunities for active play in the home, even where space is limited, including, for example, through rhythmic activities such as exercise to music and Wii play, can add to overall levels of physical activity and help to counter the 'couch potato' syndrome of inactivity. Perry (2001: 118) suggests that 'outdoor play settings may be the one place where children can independently orchestrate their own negotiations with the physical and social environment and gain the clarity of selfhood necessary to navigate later in life'. The variety of outdoor environments may include gardens, parks, streets, playgrounds, woods, fields, shallow pools, sea, snow, trees, grass, sand, beaches and icy puddles. Here, children can be engaged meaningfully, purposefully and with imagination. More consideration is made to creative spaces in Chapter 9. If we add to these the benefits to be gained in terms of developing their physical literacy through enhancing confidence, motivation, knowledge, understanding and communication, we have overwhelming evidence for the benefits of outdoor play. Thus, for children in school, not only is playtime important for their development through free play but the inclusion of outdoor as well as indoor learning in Physical Education is essential in promoting optimum physical literacy.

In the scenario below, we follow Emma on her physical literacy journey, from her early cycling experience along the smooth, hard surface of the driveway

at home, to experiences in a wide range of environments, on a variety of bikes, both alone and with many significant others, including both children and adults. As with Jack on page 16, the initial focus is on the movement capability of balance, as this is such a crucial fundamental movement acquisition for all children. In this scenario, however, we see how Emma progresses from her early acquisition of balance and general movement learning into movement mastery and enhancement of physical literacy. She takes full advantage of her high level of movement competence and branches out to expand her experience into sophisticated pursuits, resulting in enjoyment, as well as social development and overall maturity.

Scenario

Emma was just 2 years old when she set off along the driveway in her garden, enjoying her first experience of walking along while sitting on her balance bike. By the age of 3, she was a competent balance bike rider, along the drive and across the lawn in her garden and with a parent in the local park. She used her avid imagination to create stories that were played out as journeys, travelling to visit toys distributed around the garden and she found out what happens when you go too fast or try to ride into the sand pit! Once she transferred from a balance bike to a bike with pedals, she soon became a fully confident and competent bike rider and was ready to venture onto the local cycle paths with her parents. She progressed from there to following a parent along the cycle ways in local roads. She gained her cycling proficiency award and at about the same time, the garden was converted into a self-created BMX-type track, with humps and hollows, sharp turns and mud, for making up and practising tricks, devising competitions and designing races with friends. Here, she is seen to be developing her creative ability. Emma became an avid, intelligent, creative and independent bike rider who cycled with confidence and with the quality and efficiency of movement that made bike riding look easy. She also cycled daily to and from school and wherever she needed to go in the local community. By the time she left her primary school, Emma was a member of the local BMX club, went on cycling holidays with her family and knew a great deal not only about how to cycle but also about cycling sports. She was also keen to try out extreme sports such as freestyle motocross. Emma was making continuing progress and was thriving in her physical literacy journey.

From this scenario, we see that factors such as the importance of the variety of environments experienced, the quality of movement achieved, the transfer of movement skills and knowledge from one situation to another, and the application of intelligent behaviour all contribute to the enhancement of her physical literacy in terms of physical competence, knowledge and understanding of movement, motivation, confidence and self-esteem. Further enrichment comes from her creativity and imagination, interaction, communication and health promoting activity.

Creativity and physical literacy

In this, the final section of this chapter, we explore further the relationship of creativity and its association with physical literacy. Consideration is given both to the potential for enhancing creativity when simultaneously developing the three domains of physical literacy, and to the advantages of exploring creativity in movement learning as a further means of developing physical literacy.

To take ownership of becoming an imaginative and creative mover requires the learner to 'move outside the box' of current practice and to be prepared to rediscover the quality of exploration in movement that was so prominent in infancy. To have the confidence and motivation to adopt a discovery-learning approach, to be prepared to engage in 'trial and error', to have a willingness to embark on a movement path and experience that is flexible and be open to change as it progresses may be new challenges for the learner. Having a new idea and then drawing on the existing bank of movement experience to work with that idea, to bring it to fruition, calls for considerable imagination and tenacity and an ability to suspend disbelief.



Figure 2.3, *Taking the example of Makonde carvers of southern Tanzania who work with the mpingo wood, the carver draws on the creative process in picturing an idea and vision of what may emerge from the wood as a finished product. Then in the process of carving, employs the physical skills learnt since childhood, the motivation and confidence, knowledge and understanding developed over years of experience, to reveal a product that is a completely original work of art.*

■ **Figure 2.3** Makonde carving

Continuing the theme of relationships between creativity and physical literacy, the chart in Table 2.2 sets out some ways in which creativity can enhance physical literacy and some ways in which creativity can be promoted by developing all aspects of physical literacy, with the three domains listed in the central column. “An ‘enabling environment’ is one of the four statutory themes of the Early Years Foundation Stage in England” (Duncombe, 2019: 26). Having an enabling environment is a vital contributor in nurturing physical literacy and creative development and is a key POWER principle within this book.

Table 2.3 is an exploration of ways in which environmental factors can relate to both physical literacy and creative potential and the relationships between them.

In Table 2.2, taking an example from the box entitled *Physical domain*, learners who are expanding and building up a rich bank of movement vocabulary, are well placed to transfer this wealth of movement vocabulary and competence into enhancing their creativity. Taking an example from the section *Contributions of creativity to enhancing physical literacy*, creative learners can draw on their awareness and experience of growing independence in creative activity to increase their movement vocabulary and appreciation of alternative movement responses to tasks. In this way, confidence may also grow.

As learners mature in their physical literacy journey, so will their ability to tackle more detailed descriptions of the attributes within the three domains. As learners chart their progress, how do you, as mentor, enable them to explain the evidence that they draw on from their work in each attribute?

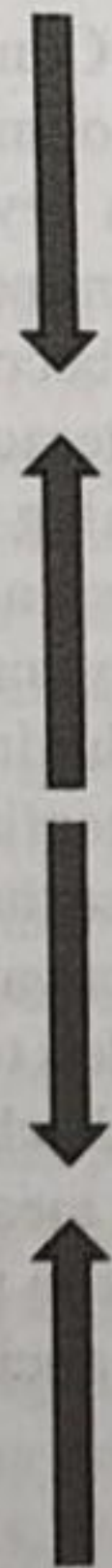
- A Motivation to be proactive in taking part in physical activity, applying self to tasks with interest and enthusiasm, and persevering through challenging situations in physical activity environments
- B Confidence in relation to the ability to make progress in learning new tasks and activities, and assurance that these experiences will be rewarding
- C Movement with poise, economy and effectiveness in a wide variety of challenging situations
- D Thoughtful and sensitive perception in appreciating all aspects of the physical environment, responding as appropriate with imagination and creativity
- E The ability to work independently and with others, in physical activities in both cooperative and competitive situations
- F The ability to identify and articulate the essential qualities that influence the effectiveness of movement performance
- G An understanding of the principles of holistic embodied health, in respect of a rich and balanced lifestyle
- H The self-assurance and self-esteem to take responsibility for choosing physical activity for life

(Whitehead, 2019: 12)

Table 2.2 Relationships between physical literacy and creativity

Contributions of Creativity to Promoting and Enhancing Physical Literacy	Aspects of Physical Literacy	Contributions of Physical Literacy to Promoting and Enhancing Creativity
Experiences of exploring a wide variety of possibilities in creative movement contexts alerts learners to a wide range of options, thus expanding their perceptions of the wealth of material available	Physical Domain Physical Competence	Expanding physical competence by increasing movement vocabulary provides learners with a rich bank of material with which to enhance the potential for creativity
Experiences of discussing and evaluating creative tasks and their outcomes alerts learners to the principles underlying actions and decisions	Cognitive Domain Knowledge Understanding	Gaining knowledge and understanding of movement content and movement performance enables learners to be perceptively self-reflective throughout the creative process
Experiences of increased independence engendered in working creatively contributes to the development of confidence, motivation and self-esteem	Affective Domain Confidence Motivation Self-esteem	The motivation and enhanced self-esteem that arise from progress in movement competence enhance the confidence of learners and frees them to be more adventurous and innovative in their creativity

■ **Table 2.3** Ways in which environmental considerations relate to physical literacy and creativity



Exploring movement with a wide range of resources provides rich opportunities for variation and innovation in the creative process Working with others in an active creative context encourages thoughtful and sensitive interaction Experiencing a wide range resources in a creative context enhances learner confidence in incorporating and maximising these in addressing and succeeding in movement challenges	Location Indoors Outdoors People involved Resources Natural Manufactured	Experiences in exploring movement in a wide range of environments and applying movement from one environment to another widens opportunities for creative activity Sensitive and empathetic interaction with others in cooperative and competitive activities can stimulate confident collaboration in the creative context Exploring movement with a wide range of resources provides rich opportunities for variation and innovation in the creative process
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SUMMARY

Building on the progress made in all three physical domains along with experience in a wide variety of environments, resources, play partners and mentors, places learners in a strong position to develop and strengthen the imaginative and creative aspects of physical literacy and Physical Education. Exploration of creativity in movement also contributes to achieving greater potential for learners to progress their physical literacy. In this chapter, we have considered children's physical and movement development in the context of becoming physically competent, laying down the foundations in the early years and then building on and consolidating these throughout the primary school years. Through applying an understanding of the processes of early childhood physical and movement competence development and of factors that enable children to embark upon their physical literacy journey, we can help to ensure that the curriculum content offered is appropriate and that teaching chimes with children's learning needs. Consideration was given also to the needs of children with delayed movement development and the challenges faced in terms of school readiness. Use of language as a key medium of communication in movement learning was explained. We then examined the concept of physical literacy as a lifelong entitlement, extending beyond becoming physically educated. The definition, domains and attributes of physical literacy were highlighted. Finally, we explored the concept of creativity as an enriching feature in developing physical literacy, along with the potential to become an even more creative learner afforded by strengths in the domains and attributes of physical literacy.

In conclusion, creative teachers can help children to capitalise on their innate and unique physical, affective and cognitive potential, educate them in developing their physical competence, guide them to increase their knowledge and understanding and inspire them to expand their range of motivational and confidence-building strategies. Creative teachers can also be role models to assist learners in maintaining their own motivation, goal-setting, challenge and achievement. By using a 'charting progress' (Whitehead, 2019: 74) approach as the means of assessment teachers can also help to build self-esteem and self-confidence in their learners and reinforce the domains of physical literacy as the means to enhancing quality of life.

FURTHER READING

- Duncombe, R. (ed.) (2019), *The Physical Development Needs of Young Children*, London: Routledge.
- Goddard Blythe, S. (2005), *The Well Balanced Child*, Stroud: Hawthorn Press.
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- Whitehead, M.E. (ed.) (2019), *Physical Literacy across the World*, London: Routledge.