User guide

The Power of Physical Play

Development & effective learning

SIREN FILMS | Understanding Childhood

Using the film

Aims of the film

This film has been made to help adults involved with the care and education of young children understand clearly the significance of physical play and the role it plays in children's growth as independent learners.

It is divided into short chapters, which can be watched separately, and fit easily into any length of training session.

Bonus dvd

The bonus dvd is a copy of the film without narration which means you can use the footage in any way you wish.

User guide

This booklet contains further information on the subjects looked at in the film. It has been written by Dr. David Whitebread, who works at Cambridge University, and carries out research on children's play and it's role in children's learning.

There are prompts for group discussions or further individual study at the end of each chapter and an extensive list of references and further reading at the end of the guide.

The importance of physical play

As animals of different species evolved on Earth, and as they became increasingly complex and possessed larger and more powerful brains, so they became more playful. Humans are by far the most playful species on the planet, and this is directly related to our unique physical and mental abilities. Play in humans is the foundation of our greatest cultural and scientific achievements.

The earliest form of play to evolve, in some reptiles and amphibians, in all mammals, primates and humans, was physical play. In the physical arena, while other species have more powerful muscles, can run faster, and have more fearsome teeth and claws, no other species play ice hockey or tennis, perform ballet or martial arts, practice their double back somersaults, or develop the physical skills necessary to play the piano, type, conduct heart surgery, sew a fine seam or juggle.

This film examines the physical play typically and enthusiastically engaged in by young children that enables them to develop these highly sophisticated physical skills and looks at what adults can do to help in this area of play and development.

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Self-regulation pg. 22

As well as providing powerful contexts within which young children develop their physical abilities, playful physical activities also significantly support the development of children's 'self-regulation' i.e. their ability to undertake tasks, and overcome difficulties, on their own initiative and without adult support. Developmental psychologists refer to this aspect of development as a combination of 'skill' and 'will' i.e. it is a combination of cognitive abilities and motivational determination. This section of the film shows examples of young children across the early years age range, encountering physical challenges and developing the skills, and exercising the will, to overcome them, sometimes independently and sometimes with adult support.

Social learning pg. 28

As with many other types of play, physical play often involves children in playing with one another and so learning social skills, becoming aware of others' feelings, learning to co-operate, developing friendships and having the opportunity to talk to one another about the task they are undertaking and what they are learning. This probably starts to happen most commonly with the youngest children during physical play. The film shows a number of examples of children playing together on physical tasks and illustrating these various important aspects of social learning.

Rough and tumble pg. 34

One particular type of co-operative physical play that sometimes causes adults some concerns is that referred to as 'rough and tumble' play. This can sometimes appear to be rather aggressive, but it is, in fact, clearly distinguishable from actual fighting by the obvious mutual enjoyment of the participants, signaled by happy faces, laughter and screams of delight. The film shows several examples of children and adults, and groups of children, rolling around, play-wrestling, running and chasing and just lying on top of one another in heaps, all with very obvious signs of enjoyment.

Risky play pg. 38

Because of their strong urge to push the boundaries and challenge themselves to do more and more difficult things, many examples of children's natural outdoor play, including climbing and running, rough and tumble, and some indoor play with tools, are inherently risky. Sandseter (2007) has classified the risky play that young children engage in and from which they seem to derive a particular thrill, into 6 categories: play involving great heights, high speed, playing with dangerous tools, playing near dangerous elements (steep cliffs, deep water etc), rough and tumble play, and playing where they can disappear or temporarily get lost. The film shows a number of such activities and how adults can support children to undertake risky play, yet still be safe.

Supporting physical play pg. 42

The final part of the film shows examples of how adults and practitioners can support children's physical play by the provision of a suitably challenging and engaging environment, a wide range of materials, and through effective adult support.

Gross motor play

Gross motor or exercise play is very common and typically occupies around 20% of children's behaviour by 4-5 years of age. The evidence suggests it supports the development of whole body and hand-eye co-ordination, is important in building strength and endurance, and, of course, is vital in giving children an early sense of themselves as physically able, the experience of enjoying physical activity and developing physical skills, and so forms the basis for a healthy, active life style. In addition, exercise releases a class of neurotransmitters in the brain called 'endorphins' which give us a feeling of well-being and contribute significantly to mental alertness, the ability to concentrate and maintain attention. Ratey & Hagerman (2008) provide an enthusiastic review of the relation between exercise and brain functioning, and state that;

'exercise cues the building blocks of learning in the brain' and is 'the single most powerful tool to optimise brain function.'

Head to toe - inner to outer

Maude (2008) describes three principles of physical development. The cephalo-caudal principle refers to the fact that development occurs from the head down to the feet i.e. that children develop control of their upper limbs before that of their lower limbs. The principle of proximo-distal development indicates that growth occurs from the centre of the body out towards the extremities i.e. that the central organs are fully functioning at birth but the young child's hands are not fully formed until they are 5 or 6 years old. The principle of differentiation refers to the development, both within the brain and the body of the young child, from an undifferentiated, global response (eg: to any pain or discomfort) to an increasingly specific response as the child matures. These principles of development each have implications for what we can expect from the young child in development and what are appropriate activities to engage them in to support their developing physical literacy.

Developing body awareness

This section of the film also contains examples of children's love of spinning around, being upside down, running and other activities which involve using their muscles to lift, push and pull objects around. These activities relate to children developing their body awareness, their co-ordination and their awareness of their body in space. As referred to in the film, this is termed proprioception, and is a brain function which involves the co-ordination of information from all our five senses and the vestibular system. The latter is located in the inner ear, and comprises two components: the semicircular canal system, which indicates rotational movements and is responsible for our sense of balance; and the 'otoliths' which are membranes sensitive to linear accelerations, and which help with eye-head-body co-ordination as we move through space .

Like many systems in the human brain, the proprioception system is dependent upon experience for its fullest development, and physical experiences in early childhood, when the brain is undertaking its major period of growth and structural change, is highly significant in developing these abilities. This is particularly important for children with 'dyspraxia', who have difficulties with co-ordination and movement tasks, and who will find many physical activities particularly challenging. These children can be greatly helped in their development of physical abilities by the full range of physical play, and early childhood educators can provide important support in this regard. Drew (2007) and Goddard-Blythe (2012) provide excellent reviews of the nature of dyspraxia and programs of physical activity which are both appropriate for and enormously helpful for children who suffer from these difficulties.

Rhythm and musicality

(with acknowledgements to Antonia Zachariou, PhD candidate, University of Cambridge).
Children's innate musicality and love of rhythm and rhythmic movement is also illustrated. Even in the womb, during the last months of pregnancy, the fetus responds to musical sound. From as early as birth, infants possess impressive listening skills, an excellent memory for music and an interest in expressive musical performances, to such a degree that their musical skills have, in some regards, been shown to outperform those of adults. Trehub (2007) has reviewed this evidence and gone so far as to describe infants as 'musical connoisseurs'. Certainly, they are very positively disposed towards music, showing a very early preference for songs directed towards them compared with speech.

In addition to ensuring that infants are enthusiastic movers and dancers, which clearly contributes to their development of physical co-ordination, this early love of music and rhythm appears to be an important evolutionary adaptation supporting early communication skills and social interactions. Malloch & Trevarthen (2009) review the evidence of the importance for early development of emotionally warm and rhythmical 'proto-conversations' between mothers and infants in the first few months of life. Here, universally across cultures, as mothers speak, sing, pull faces, bounce and swing their infants and express feelings towards them, infants are observed to respond with synchronous vocal, bodily and gestural rhythmic patterns. The human body is governed by a whole system of circadian, metabolic and other biological rhythms, and young children's enthusiasm for rhythmic movement is part of the development of brain structures governing these, as well as underpinning their developing physical abilities.

General prompts for discussion

- Why is gross-motor and exercise play important?
- What main types of gross-motor and exercise play should we encourage and provide for?
- What are the implications of the developmental features of children's physical growth and development for physical play provision?
- How can we encourage children to engage in the full range of physical and exercise play?
- What sorts of physical environments should we provide for children to play in?
- Do natural environments, like the beach or a woodland, offer opportunities not available in a school playground?
- How do we strike a balance between safety and risk?
- How can adults help?

Prompts for developing practice

- Do we understand sufficiently about children's physical development, and the brain mechanisms which underpin it, to be able to make good decisions about our practice in supporting it?
- In our setting, are we providing for the full range of children's gross motor and exercise play?
- Do we have a good range of equipment?
- Are we using the outdoor space and indoor opportunities to maximize opportunities for the children's gross motor and exercise play?
- Do we provide appropriate adult support for children's gross motor and exercise play?
- Do we have an adequate system of observation to record individual children's involvement in gross motor or exercise play, and to help us decide on appropriate provision for that child?
- How do we ensure that every child has the full range of gross motor and exercise play experiences they need for healthy development?
- How do we ensure that every child enjoys their gross motor and exercise play, and develops positive dispositions towards physical activity?
- Do we make appropriate adaptations to provision for children with co-ordination problems and dyspraxia?

Fine motor play

The growth of the hand and grip

As Maude (2014) points out, as a consequence of the principle of proximo-distal development, while the central organs of the body are fully functioning at birth, the young child's hands are not fully physically developed until they are 5 or 6 years of age. At birth, the bones of the wrist have not yet separated and the growth of the structure of bones, muscle and cartilage that allows for all the complex movement of the hands and fingers takes a number of years, and is highly dependent upon frequent activity and exercise.

There are a number of different aspects to the development of fine motor movement and control which enable us to engage in a range of activities. These include increasingly differentiated control of the fingers (needed, for example, when playing a musical instrument or using a keyboard), and developing a range of types of grip. The development of these skills is crucially dependent upon experience, partly related to the physical growth of the hand, but also because they involve increasingly well-developed relationships between the hand and the brain regions which control them. Concert pianists, for example, have been shown to have more developed growth in brain regions responsible for the control of the hand.

The development of the ability to use different types of grip is particularly important for tool use, including, for example, scissors, hammers, cutlery, tweezers, screwdrivers, paintbrushes, pens and pencils, all of which require different grips, and the ability for fine movement and muscular strength.

In educational contexts, the pincer or tripod grip (between the thumb and index finger) is of particular significance, as this enables the most dexterous manipulation of a pen or pencil when drawing or writing. Before the age of 6 or 7 years, however, many children have not achieved this and are more comfortable using the palmar or power grasp (pencil gripped between the palm and the fingers) which does not allow such accurate control.

It is enormously beneficial in this area to provide young children with as wide a range as possible of fine motor challenges, through the use of tools requiring different grips and through a whole array of finger games (action rhymes, finger puppets, cat's cradle etc). The value of adult modeling in this, as in all areas of physical play, is also important to recognise. Many young children are particularly fascinated by very small objects and this can be used to advantage in setting them fine motor challenges.

Hand-eye co-ordination, concentration and perseverance

As well as supporting the development of young children's manipulative skills with their hands and fingers, many aspects of fine motor play require children to use their eyes to develop their co-ordination. Typically, young children have to watch themselves undertaking fine motor and other physical activities very carefully. This arises as they have not yet built up the strong links in their brains between the information from their kinesthetic awareness of their hand movements, and the information from their visual system about the interaction of their hands with what they are manipulating. As a consequence, this type of play is also a particularly powerful context in which children learn to develop their hand-eye co-ordination, and to concentrate and persevere (which is discussed more fully in the next section).

General prompts for discussion

- Why is fine motor play important?
- What main types of fine motor play should we encourage and provide for?
- What are the implications of the growth of children's hands and development of their hand-eye co-ordination for fine motor play provision?
- How can we encourage children to engage in the full range of fine motor play?
- What sorts of activities should we provide to present children with engaging fine motor challenges?
- How can adults best support this type of play?

Prompts for developing practice

- Do we understand sufficiently about children's physical development of their hands and their hand-eye co-ordination, to be able to make good decisions about our practice in supporting it?
- In our setting, are we providing for the full range of children's fine motor play?
- Do we have a good range of equipment and activities which set different challenges regarding grip and finger control?
- Do we provide appropriate adult support for children's fine motor play?
- Do we have an adequate system of observation to record individual children's involvement in fine motor or play, and to help us decide on appropriate provision for that child?
- How do we ensure that every child has the full range of fine motor play experiences they need for their development of their manipulative skills?
- How do we ensure that every child enjoys their fine motor play, and develops positive dispositions towards it?
- Do we make appropriate adaptations to provision for children with co-ordination problems and dyspraxia?

Self-regulation

Cognitive self-regulation

The skill, or cognitive, element of self-regulation involves processes whereby children develop an increasing repertoire of strategies in relation to tasks with which they are confronted, and learn to deploy these strategies appropriately when they are needed. The underlying cognitive processes involved here are referred to as 'executive functioning' (i.e. controlling one's own mental and behavioural activity) and 'metacognition' (i.e. by monitoring one's own mental activity, and the relative success of the outcomes, developing increasingly effective strategies for undertaking tasks). A considerable body of research evidence has demonstrated that these skills predict educational success, emotional well-being and general life outcomes more powerfully than any other aspects of early learning (see Whitebread & Coltman, 2011, and Whitebread, 2014, for overviews of research in this area and implications for early childhood education). There is also a growing body of evidence that playful activities support the early development of these abilities. As we see illustrated in the film, in physical play, young children set their own goals, repeatedly try out different strategies, or variations on existing strategies, to achieve them, and receive clear feedback about their successes and failures. This type of play thus provides all the experiential elements required to strongly support children's emerging metacognitive and self-regulatory skills (Whitebread, 2010).

Self-determination

The now widely accepted theory concerning the will, or motivational aspect of self-regulation, is referred to as 'self-determination theory' or SDT (Deci, 2008; Ryan & Deci, 2000). This brings together a vast body of research on human motivation, and essentially indicates that there are three fundamental human needs or drives which, if satisfied, result in high levels of emotional well-being arising from the ability to persevere and to overcome difficulties to achieve personal goals. These three psychological needs are concerned with competence, autonomy and relatedness. Young children's drive for competence is vividly represented in the illustrative examples in the film. Children can be observed constantly pushing themselves to achieve something new, always keen to push themselves to manage to do something that they find difficult. The famous and highly influential Russian psychologist, Lev Vygotsky, provided an often quoted metaphor for this characteristic of children's play, when he wrote that:

> **"In play a child always behaves beyond his average age, above his daily behavior; in play it is as though he were a head taller than himself"**
> (Vygotsky, 1978, p. 102)

A child's feeling of competence is crucially important when they face difficulties. If children have the repeated experience of difficulty, but then succeed in overcoming it, they develop a strong belief in their ability to overcome difficulties, or what is sometimes termed a high level of 'self-efficacy'. This leads to a very positive response to difficulties or failures, involving the child in increasing their efforts, trying other strategies, and consequently ultimately succeeding. This 'virtuous cycle', producing what might be termed a 'can do' attitude, supports children in developing what might be termed 'emotional resilience' in the face of difficulties and failures. By contrast, however, if a child repeatedly experiences difficulty and failure, despite their best efforts, there is a danger that they will come to doubt their abilities and develop 'learned

helplessness', whereby they expect to fail and quickly give up at the first sign of unfamiliarity or difficulty. The role of the adult in supporting young children's feelings of self-efficacy and competence is, therefore, vital. The skill here for the practitioner is to provide opportunities for children to challenge themselves, and allow them to struggle, and see if they can overcome it for themselves, but be ready to provide practical and emotional support when it is needed.

The need for autonomy has also been widely researched. As we noted above, the first few years of a child's life, from a psychological point of view, are about gaining control of one's own mental and behavioural processes. Even very young babies clearly enjoy feelings of being in control and love having the experience of their actions causing something to happen in a predicatable manner – for example, when they drop something on the floor and an adult picks it up for them, they giggle and immediately drop it again, and will happily play this game for a long time. Physical play, as illustrated in the film, provides many opportunities for children to set their own goals, working out their own ways of achieving them, and developing a sense of themselves as active agents in the world who can cause things to happen.

The third psychological need included in SDT, relatedness, is concerned with their social relations, and is discussed in the next section of the film.

General prompts for discussion

- Why is physical struggle important?
- What are children learning when they are having difficulties with a physical task?
- How can we tell when a child has a 'can do' attitude, or feelings of helplessness?
- What sorts of activities should we provide to present children with engaging physical challenges?
- How can adults best support children when they are experiencing difficulties in physical play activities?

Prompts for developing practice

- Do we understand sufficiently about children's motivation to be able to make good decisions about our practice in supporting it?
- In our setting, are we providing children with a good range of physical challenges which present them with the appropriate level of difficulty, so that they can ultimately succeed?
- Do we provide appropriate adult support for children when they are experiencing difficulties during physical play?
- Do we have an adequate system of observation to record individual children's motivational patterns, and to help us decide on appropriate provision for that child?
- Are some children in our setting avoiding physical challenges and need support to experience persevering to succeed when activities are physically difficult?
- How do we ensure that every child enjoys physical challenges, and develops positive feelings towards them?
- Do we allow children to set themselves their own physical challenges, and to tackle them in their own way, and at their own speed?
- Do we make appropriate adaptations to provision for children with co-ordination problems and dyspraxia?

Social learning

Developing social skills

Human beings are an intensely social species and from very early in life, children show a clear interest in other children and obvious enjoyment in doing things together with others. There are individual differences, however, in the success with which children develop social skills, and these have very significant consequences for their ability to form and maintain friendships, work co-operatively with other children, learn from other children and experience the self-esteem and social confidence which is derived from successfully managing social relationships. In SDT this psychological need to feel loved and valued by significant others is referred to as the need for relatedness.

Research in this area has focused on children's development of the understanding that other individuals also have a mind and experience the world differently from oneself, referred to in developmental psychology as a 'theory of mind'. It is generally agreed that the lack of a theory of mind is an important causal factor in the difficulties faced children suffering from autism. There is also research demonstrating that social skill development is, not surprisingly, influenced by early social interactions (for example, younger siblings have been shown to develop a theory of mind earlier than first born children), and that developing friendships is very important in supporting early emotional well-being. Dunn (2004) reports extensive studies of children's early social relationships and the important role of friendships in this. Children who are either very shy or socially inept (eg overly aggressive) can benefit enormously from early sensitive adult intervention to help them to develop the skills of friendship (Gallagher & Sylvester, 2009) and co-operative physical play can often be a very powerful context in which social skills and confidence can be developed. Whitebread (2012a) has provided a useful overview of research in this area and implications for early years educators.

Learning from one another and metacognitive talk

A second important feature of the social aspects of children's physical play is the opportunities it affords for them to discuss their play, the physical challenges they are setting themselves, the strategies they are adopting and so on. Several typical examples of the talk generated by co-operative physical play are included in the film. This talk makes a significant contribution to children's physical and language development, and we have very clear evidence that talk of this kind also greatly enhances children's metacognitive and self-regulatory skills. Children brought up by parents who discuss mental processes, such as thoughts and feelings, how we learn things, and so on, develop these skills earlier, and metacognitive talk in educational settings has been shown to be associated with clearly enhanced learning abilities (Whitebread, 2012b).

General prompts for discussion

- Why is social learning in physical play important ?
- What social learning occurs during physical play?
- How does physical play support the development of children's friendships and social skills?
- How does co-operative physical play support language and self-regulation in young children?
- What sorts of activities should we provide to encourage children to engage in co-operative physical play?
- How can adults best support children's co-operative physical play when they are experiencing difficulties in playing with other children and establishing and maintaining friendships?

Prompts for developing practice

- Do we understand sufficiently about children's co-operative physical play to be able to make good decisions about our practice in supporting it?
- In our setting, are we providing children with a good range of opportunities for co-operative physical play?
- Do we provide appropriate adult support for children when they are experiencing social difficulties during co-operative physical play?
- Do we have an adequate system of observation to record individual children's social and friendship skills, and to help us decide on appropriate provision for that child?
- Do we effectively support children to develop social and friendship skills in the context of physical play, particularly those children who are shy or socially inept?

Rough and Tumble

Developing emotional bonds

Rough and tumble play has been widely researched and been shown to be an important type of physical play across the animal kingdom. While in simpler animals, biologists have generally regarded it as being a means of practicing fighting skills, in more complex species it appears to have evolved into a mechanism for controlling aggression, particularly among close family members, and certainly in human children it has been shown to be primarily concerned with establishing close emotional bonds and developing understandings of emotional expression (Power, 2000; Pellegrini, 2006; Jarvis, 2010). A strong clue to the purposes of rough and tumble play can be found when we examine with whom we engage in this type of play – close family members, sometimes much-loved pets, close friends and those with whom we are involved romantically.

So, it would appear that the attraction of rough and tumble play for young children, and the high levels of enjoyment they derive from it, should be trusted by adults, and opportunities for this type of play should be supported. Of course, in the excitement things can go awry on occasions, and there is always the potential for children to be accidentally hurt, or for a child with poor behavioural self-regulation to lash out. For this reason, it is clearly important for adults to be watchful when children are engaging in rough and tumble play (particularly if the location of the play presents safety issues, or if children are involved who are known to have difficulty regulating their aggression). However, children whose parents play with them in this way are far more likely to be 'securely attached', with all the resulting emotional advantages that derive from close emotional bonds within a family. Rough and tumble play amongst children in a care or educational setting is clearly a sign of a warm and supportive environment, and is a type of physical play with strong links to children's self-confidence, to their social skills and to their emotional well-being.

General prompts for discussion

- Why is rough and tumble play important?
- What learning occurs during rough and tumble play?
- How does rough and tumble play support the development of children's friendships and social skills?
- What sorts of opportunities or environmental features should we provide to support children's rough and tumble play?
- How can adults best support children's rough and tumble play when they are experiencing difficulties in playing with other children and establishing and maintaining friendships?

Prompts for developing practice

- Do we understand sufficiently about children's rough and tumble play to be able to make good decisions about our practice in supporting it?
- In our setting, are we providing children with a good range of opportunities for rough and tumble play?
- Do we provide appropriate adult support for children when they are experiencing social difficulties during rough and tumble play?
- Do we have an adequate system of observation to record individual children's abilities to engage positively and happily in rough and tumble play, and to help us decide on appropriate provision for that child?
- Do we effectively support children to develop social and friendship skills in the context of rough and tumble play, particularly those children who are shy or socially inept?

Risky play

Managing risk

It is an interesting observation that young children clearly appear to derive considerable enjoyment from engaging in risky or slightly dangerous activities. The evidence seems to suggest, however, that this is an adaptation developed during our evolution as a species, and serves the important purpose of helping the individual to learn about the limits of their physical abilities, to recognise when they need help, and to recognise the boundaries between what is safe and what is dangerous. In this sense, children's risky play is crucial in their learning of how to manage risk.

A number of researchers have pointed out that, in our modern safety conscious world, we are actually not helping children to learn how to be resilient to cope with the inevitable risks of everyday life, by putting them in cotton wool during their early years. As Rivkin (2006) and others have argued, there are many aspects of modern, urban living, which make parents more likely to be overly conscious about their children's safety, but we need to find ways of enabling risky play and exciting experiences to be part of young children's experience. There is also the concern that, as a consequence of urban living, children today do not have the opportunities they need to play in natural environments, such as woodlands, fields, beaches, rock pools and so on, and this has changed quite dramatically in the UK within a few decades. A report written for the UK National Trust (Moss, 2012) cites evidence that the area where children are allowed to range unsupervised around their homes has shrunk by 90% since the 1970s. At the same time, in the UK and many other countries, rates of obesity, self-harm and mental health disorders diagnosed in children have climbed significantly. This is attributed to a now well recognised phenomena of 'nature deficit disorder' (Louv, 2005) arising from children having very limited access to the outdoors and natural environments. Indeed, there is some evidence that risky play is important for children's emotional well-being and that children who are not given these opportunities are more likely to be fearful and neurotic (Sandseter, 2007).

Tovey (2010) has provided a very useful review of the evidence concerning the benefits for children of risky play, and how we can support children in this regard to their advantage.

General prompts for discussion

- Why are children's opportunities to engage in risky play more limited now than they were previously?
- Why is risky play important ?
- What learning occurs during risky play?
- What sorts of opportunities or environmental features should we provide to support children's risky play?
- How can adults best support children's risk play when they are not confident in taking risks and overly fearful or cautious?

Prompts for developing practice

- Do we understand sufficiently about children's risky play to be able to make good decisions about our practice in supporting it?
- In our setting, are we providing children with a good range of outdoor and indoor opportunities for risky play?
- Do we provide appropriate adult support for children when they are engaging in risky play?
- Do we have an adequate system of observation to record individual children's dispositions to engage positively and happily in risky play, and to help us decide on appropriate provision for that child?
- Do we effectively support children to engage positively?

Supporting physical play

Environment and materials

The film illustrates how a wide range of environmental features and materials, many of which are relatively inexpensive, can support and encourage children to be physically adventurous and playful.

Outdoor space is vital, with space to run, and large natural structures such as mounds, slopes, trees, bushes, rocks and logs, as well as 'man-made' materials and apparatus, are required which can be climbed on, balanced along, hung from, hidden in, swung from and so on, to stimulate children and provide them with an exciting range of challenging, playful opportunities.

Indoors, small toys and craft materials can also support fine motor skill development. An important principle here is for the environment and the materials with it to be as open-ended and flexible as possible, so that children are not constrained in the play opportunities, and can use their natural creativity to explore and invent many different physical play activities.

Effective adult support

A number of key features of effective adult support are also illustrated which come under the general headings of providing emotional support and 'scaffolding'. Whitebread (2012c) has reviewed the clear evidence that children need to feel emotionally secure in any situation in order for them to be adventurous. Children derive emotional security from adults who are warm and sensitive, who are consistent in their behaviour, and who show that they are genuinely interested in, care for and value and enjoy the children's company.

Scaffolding is a metaphor whereby adult support for children's learning is seen as a temporary support structure, like the scaffolding on a building site, which is provided when needed, but withdrawn once the building can stand up on its own. The provision of various types of help and support when they are needed, but combined with sensitive withdrawal as the child becomes more competent, supporting their autonomy and self-regulation, is one of the complex skills required to provide effective support for children's learning. In the film we see some highly skillful adults and practitioners encouraging children to persevere, breaking down tasks into simpler stages, making suggestions, modeling physical actions, asking questions and providing clear feedback, all important elements of high quality scaffolding. As we see, this supports children to learn from mistakes, to persevere when there is a difficulty, and to productively extend their play and their learning. A key principle here is that through all this, however, the children remain in control. This is vitally important in supporting children to become powerful, self-regulating learners, which they do first of all through their physical play.

General prompts for discussion

- What features of outdoor and indoor environments are required to provide opportunities for physical play?
- Why is it important to support children to feel emotionally secure, as a support for physical play?
- How can adults interact with children in order to ensure that the children receive maximum benefit from their physical play?
- Why is it important that children are allowed to set their own goals in physical play, and that adults allow children to be in control?

Prompts for developing practice

- Do we understand sufficiently about children's physical play to be able to make good decisions about our practice in supporting it?
- In our setting, does our outdoor and indoor environment, and the materials we provide, present children with a good range of opportunities for the full range of physical play?
- Do we provide appropriate adult support for children when they are undertaking physical play?
- Do we have an adequate system of observation to record individual children's physical play preferences and abilities, and to help us decide on appropriate provision for that child?
- Do we effectively support children to develop physical skills through play, particularly those children who experience difficulties in this area?

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