



Fundamental Skills & Physical Literacy

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Lifelong Involvement in Sport and Physical Activity (LISPA)

Regular physical activity is an essential element of a healthy lifestyle for children and adults, and it is one area of our health over which we have control.

The LISPA framework of Lifelong Involvement in Sport and Physical Activity can assist in creating an environment that ensures everyone learns the fundamentals of movement and are provided with a pathway to develop and continue within sport and physical activity. The LISPA framework caters for all levels of physical activity and sport involvement. By learning the fundamentals of movement and developing a positive attitude to physical activity and sport, individuals can gain the skills, experience and attitudes which will allow them to take part in physical activity and sport throughout their lives. The LISPA framework (*see figure 1 below*) incorporates the Long Term Player Athlete Development (LTPAD) pathway.

There are five main objectives in the framework:

- Positive health benefits for participants throughout their lives
- The development of a positive attitude to sport and physical activity
- Development of physical literacy
- Clear phases of development for participants and performers
- Provide a framework for the planning and resourcing of sport and physical activity



Figure 1: Lifelong Involvement in Sport & Physical Activity (LISPA) Framework

The LISPA framework suggests that an individual's involvement in sport and physical activity progresses through a series of phases. The first 3 phases of the LISPA Framework (Active Start, FUNdamentals, and Learn to Play & Practice) are vitally important, as the combined goal of these phases is to develop physical literacy. Once individuals have passed through these phases they will be well equipped with the physical, social and mental skills necessary to remain active throughout their lives. Physical literacy is the foundation of the LISPA framework and provides children with the tools they need to take part in a wide range of physical activity and sports, much in the same way as numeracy and literacy skills prepare a child for a life of work or study.

Phase 1: Active Start: Active Start focuses on providing infants, toddlers and preschoolers with opportunities to participate in daily physical activity. Active Start promotes movement and communication and develops confidence and self-esteem. Unstructured physical activity and active play are recommended for several hours per day for toddlers and preschoolers.

Phase 2: The objective of **Phase 2**, the **FUNdamental phase** is to learn fundamental movement skills, develop social and mental attributes associated with enjoyment of physical activity and lays the foundations of physical literacy through a positive fun approach. Fundamental movement skills, such as running, jumping, throwing and catching, and confidence in water skills, underpin all aspects of the individual's subsequent development in physical activity and sport.

Phase 3: The objective of **Phase 3**, the **Learning to Play and Practice phase** is to learn overall sports skills and specialised movement skills through a positive fun, multi-sport approach. It will allow the opportunity to continue to experience social and mental attributes associated with physical activity and the development of physical literacy. This phase should include developing or refining skills, playing a wide range of sports and becoming familiar with the habit of practice and playing within a friendly, fun based supportive environment. Specialised movement skills are best developed after fundamental skills have been acquired. Along with encouraging fun and physical literacy, both the FUNdamental and Learning to Play and Practice

phases should strive to provide opportunities to experience a sense of achievement and reach optimum potential.

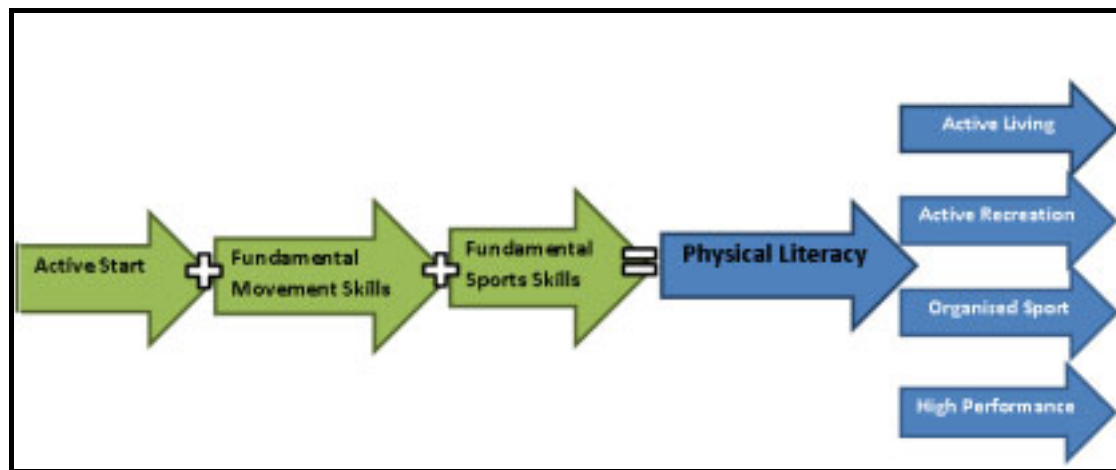


Figure 2: Adapted from Developing Physical Literacy

Physical Literacy

Physical Literacy has been identified in the LISPA framework as the foundation on which life long involvement in sport and physical activity can be achieved. The definition of Physical Literacy is: “the development of fundamental movement skills and fundamental sport skills that permit a child to move confidently and with control, in a wide range of physical activity, rhythmic (dance) and sports situations” (Higgs, Balyi, Way, Cardinal, Norris & Bluechardt, 2008 pg.5). The authors also identified that Physical literacy also includes the ability to ‘read’ what is going on around them in an activity setting and react appropriately to those events. Many of the definitions of physical literacy focus on the development of physical skills, however from a child centred perspective we believe that sport and physical activity has a much bigger role that just improving a child’s physical skill.

Fundamental Movement Skills

To develop physical literacy a child should first master the fundamental movement skills. Having these skills is an essential part of enjoyable participation and a lifelong interest in an active lifestyle.

The Fundamental Movement Skills are also often grouped into types of movement Locomotor Skills, Object Skills, and Body Control Skills. (*see figure 3*)

Locomotor Skills: involve the body moving any direction from one point to another, e.g. walking, running, skipping, hopping, jumping.

Body/Stability Skills: involves the body balancing either in one place (static) or while in motion (dynamic), these include twisting, turning, and balancing (statically and dynamically).

Object/Manipulative Skills: involve handling and controlling objects with the hand, foot or an implement (stick, bat, racquet) and include throwing, catching, striking (hands, feet, implement).

Locomotor Skills	Object Control Skills	Body Control
<ul style="list-style-type: none"> ↳ Walking ↳ Running ↳ Jumps 1 to 1 (hop) 1 to 1 (leap) 1 to 2 2 to 2(high) 2 to 2(long) ↳ Skipping ↳ Dodging ↳ Leaping ↳ Side Gallop ↳ Side Step ↳ Swimming ↳ Climbing ↳ Swinging ↳ Hands? 	<ul style="list-style-type: none"> ↳ Catching ↳ Throw ↳ Passing ↳ Kicking ↳ Striking with implement ↳ Striking with hands ↳ Control ↳ Bounce ↳ Dribble Hands Feet Stick/Racquet 	<ul style="list-style-type: none"> ↳ Agility *(FOM) ↳ Balance*(FOM) ↳ Co-ordination*(FOM) ↳ Rotation ↳ Landing ↳ Twisting ↳ Turning ↳ Stopping <p>*(FOM) - Fundamental of Movements</p>

Figure 3: Fundamental Movement Skills (**note this is not a definitive list**)

Regardless of our specific list of the fundamental movement skills one thing is certain, FUNdamental Movement Skills must be learned first before fundamental sports skills “Learning fundamental sports skills before mastering fundamental movement skills reduces performance ability later” (Higgs, Balyi, Way, Cardinal, Norris & Bluehardt, 2008 pg 10).

When should a child learn Fundamental Movement Skills

(FMS):

Despite the fact that children learn and develop at different rates, the sequence in which they learn the Fundamental Movement Skills is the same for almost all children. Figure 4 (FMS chart, taken directly from the Canadian Sport for Life, Developing Physical Literacy) looks at the when and where children learn and practice fundamental movement skills. The FMS chart shows a number of the most important fundamental movement skills each child should master as well as giving an indication of readiness for learning each skill. (NOTE: There is a tremendous variability in the normal time of onset of skills among children, and this chart should be considered only as a rough guide to the sequence of development that might be expected). All children should aim to learn the Fundamental Movement Skills at the appropriate stage of development, thus increasing the likelihood of an active lifestyle. From a practical coaching perspective the evidence suggests that those coaching younger children at the fundamental stage should focus almost entirely on Physical Literacy. This requires a shift in the way we think about children's sport and the education of our coaches (all those who work with children) across the system.

Much of the research suggests that the best time for a child to learn fundamental skills is in the first 8 years; this time line has been extended by many organisations working with young people. "One of the most important periods of motor development in young people is between the ages of 7 and 12" (Youth Sport Trust, Pg 2). Motor development also includes the development of Fundamental Sports Skills, which follow from the development of Fundamental Movement Skills.

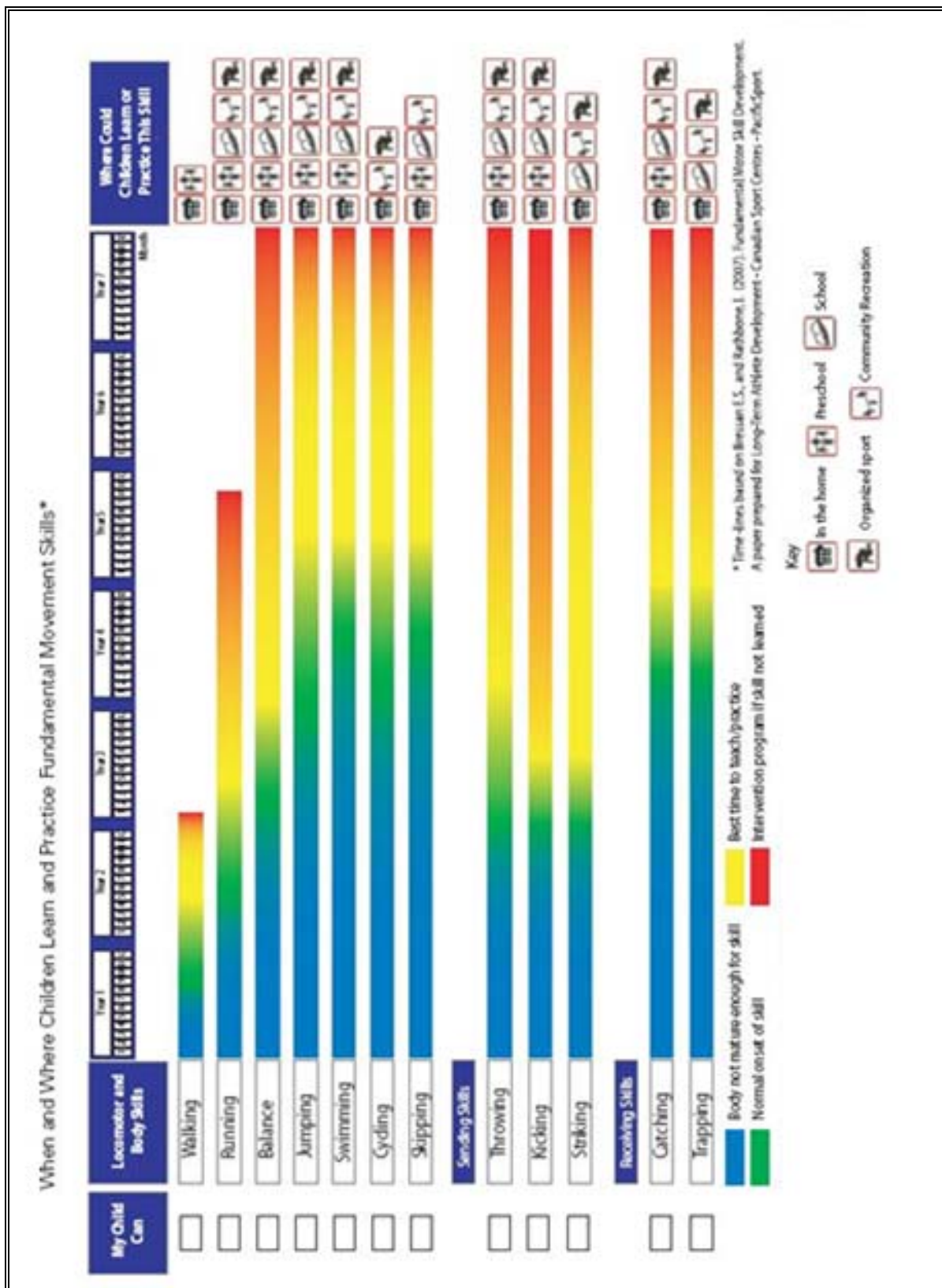


Figure 4: When & Where Children Learn & Practice Fundamental Movement Skills

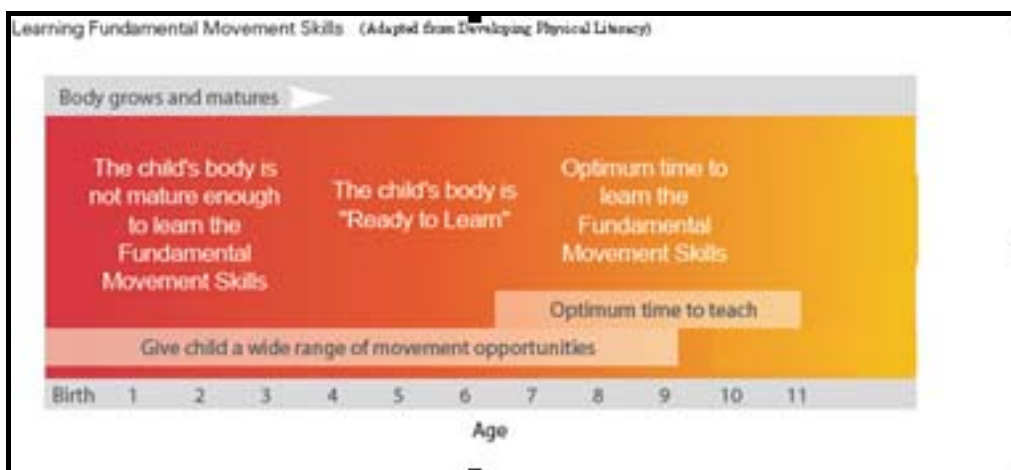


Figure 5: Learning Fundamental Movement Skills (adapted from Developing Physical Literacy)

Fundamental Sports Skills:

Each sport has its own set of fundamental sports skills. In basketball for example these may include stance, footwork, dribbling, passing, shooting and making good decisions on the court.

Differences between fundamental movement skills and fundamental sports skills:

Kicking skills:

*In the **Fundamental Movement Skill** stage, children learn the basic kicking action, with each foot. They kick a wide variety of balls and try different things – kicking as far as they can, kicking to hit a target, kicking to keep the ball on the ground, kicking the ball as high in the air as they can.*

*In the **Fundamental Sports Skill** stage (e.g. soccer); the child learns to kick a soccer ball without touching the ball with the hands. They learn how hard they have to kick the ball to get it to another team member, and how to kick the ball with the inside of the foot to increase passing accuracy.*

Catching skills:

*In the **Fundamental Movement Skill** stage, the child learns to catch – with both hands together in a two handed catch, and then with one hand at different heights. They catch a wide variety of balls of different sizes and weights, and learn to catch the ball while they are standing still, and when moving towards the ball – skills that can be transferred to many sports they later take up.*

(Higgs, Balyi, Way, Cardinal, Norris & Bluechardt, 2008 pg. 12)

In the **Fundamental Sports Skill** stage (e.g. Hurling) the child learns to catch the sliotar with the non-dominant hand, when it is thrown and then when it is hit with a hurley, when this skill is acquired, the child takes the hurley in the dominant hand and raises it above their head and just behind the non- dominant hand to protect from an opponents hurley coming from behind. The child now learns to catch the sliotar with the hurley in the correct place.

Benefits of Fundamental movement skills

“Children who possess inadequate motor skills are often relegated to a life of exclusion from organised and free play experiences of their peers, and subsequently, to a lifetime of inactivity because of their frustrations in early movement behaviour” (Seefeldt, Haubenstricker and Reuchlien 1979 cited in Gramam, Holt, Hale and Parker, 2001 pg. 31).

Children who lack the Fundamental Movement Skills are likely to experience frustration and difficulty learning more advanced skills, thereby reducing their enjoyment of sport and physical activity. Children tell us that not having the skills to play is one major reason they drop out of sport and physical activity. Research shows that ‘negative self-perception of motor ability is a major barrier to participation’, and “without the development of Fundamental Movement Skills many children withdraw from physical activity and sport, and turn to more inactive and/or unhealthy choices during their leisure time” (Cote, Lidor & Hackfort, 2009; Williams et al 2008; Wrotniak, Epsetein, Dorn, Jones, & Kondilis, 2006).

The reality therefore is that those children who possess the fundamental skills, are more likely to play more often and enjoy the experience, while those who lack the skills are often left out. “This creates a vicious circle; those with the skills play and through that play further develop their fitness and skills” (Developing Physical Literacy 2009 pg. 6).

Mastery of fundamental movement skills can have a direct effect on the health of children and young people. Studies have shown that children and adolescents with greater fundamental movement proficiency tend to be more physically active, have higher aerobic fitness (Okely et al, 2001) and self esteem (Ulrich, 1987) and are less likely to be overweight (Okely et al 2004).

In a review of the literature examining the relationship between fundamental movement skills and potential health benefit in children and adolescents, (Luban, Morgan, Cliff, Barnett and Okely 2010 pg 1020) found “strong evidence for a positive

association between FMS and physical activity in children and adolescents. There was also a positive relationship between FMS competency and Cardio Respiratory Function (CRF) and an inverse relationship between FMS competency and weight status”.

The evidence is clear that the development of fundamental movement skill will contribute significantly to future athletic development and life long participation, by equipping young people with the confidence to participate in sport and physical activity.

The Sports Coach UK’s Coaching Children Curriculum (2011), has identified the following reasons for the development of fundamentals:

- *Early experiences of sport have been shown to greatly influence an individual’s future involvement and engagement.*
- *The development of fundamental movement skills in early childhood has a significant effect in the level and quality of physical competence attained in maturity.*
- *Sport has been identified as a very important vehicle for the development of skills in children that go beyond the track, pitch or gym (i.e. social, personal and interpersonal skills, self confidence, self worth, community cohesion, health lifestyle etc.).*

Irish Children and Physical Activity

The World Health Organization and The National Guidelines on Physical Activity for Ireland recommend that all children and young people should be active at a moderate to vigorous intensity for at least 60 minutes every day.

It is clear from recent Irish studies that Irish children are not active enough to be healthy.

Key physical activity findings from The Children's Sports participation and physical activity study (2010)

- 19% of primary and 12% of post-primary school children met the minimum physical activity recommendations – at least 60 minutes of moderate to vigorous physical activity (MVPA) daily. These proportions have not improved since 2004.
- Girls were less likely than boys to meet the physical activity recommendations.
- The likelihood of meeting the physical activity recommendations decreased with increasing age.
- Socio-economic status did not influence the proportion of children meeting the physical activity guidelines.
- Children who met the Department of Health and Children's physical activity recommendation of at least 60 minutes of MVPA daily had the best health profile of all children.
- The number of days per week that primary children reached the required 60 minutes daily of MVPA increased significantly if they took part in extra-school sport or physical activity, or if they actively commuted to school.
- Among post-primary pupils, participation in extra-school or extra-curricular sport or physical activity were significant determinants of daily bouts of ≥ 60 minutes of MVPA. Active commuting to school and minutes of physical education were also a significant determinant of participation for females.

Obesity has reached epidemic levels in Ireland. In February 2010 figures show that 300,000 children are overweight, with the number set to grow by 10,000 every year. We know more than ever that there are a number of factors that play a role in children's weight. Dr. Muireann Cullen from the Nutritional and Health Foundation, identifies "the fundamental reason that our children are overweight is this: Too many are eating too much and moving too little".

Many studies have identified that physical fitness and health of children are substantially enhanced by regular physical activity. When compared to “inactive young people, physically active children and youth have higher levels of cardio respiratory endurance and muscular strength, and well-documented health benefits include reduced body fatness, more favourable cardiovascular and metabolic disease risk profiles, enhanced bone health, and reduced symptoms of anxiety and depression.” (Physical Activity Guidelines for Americans 2008 pg. 15).

Participation in physical activity has also been found “to reduce rule-breaking behaviour, to improve attention span and class room behaviour” (CSPPA Study 2010 pg. 7).

Physical Literacy does not happen by accident

Developing physical literacy among Irish children will take a combined effort from parents, schools, community recreation and sport. It is a complex process and requires careful planning and quality delivery.

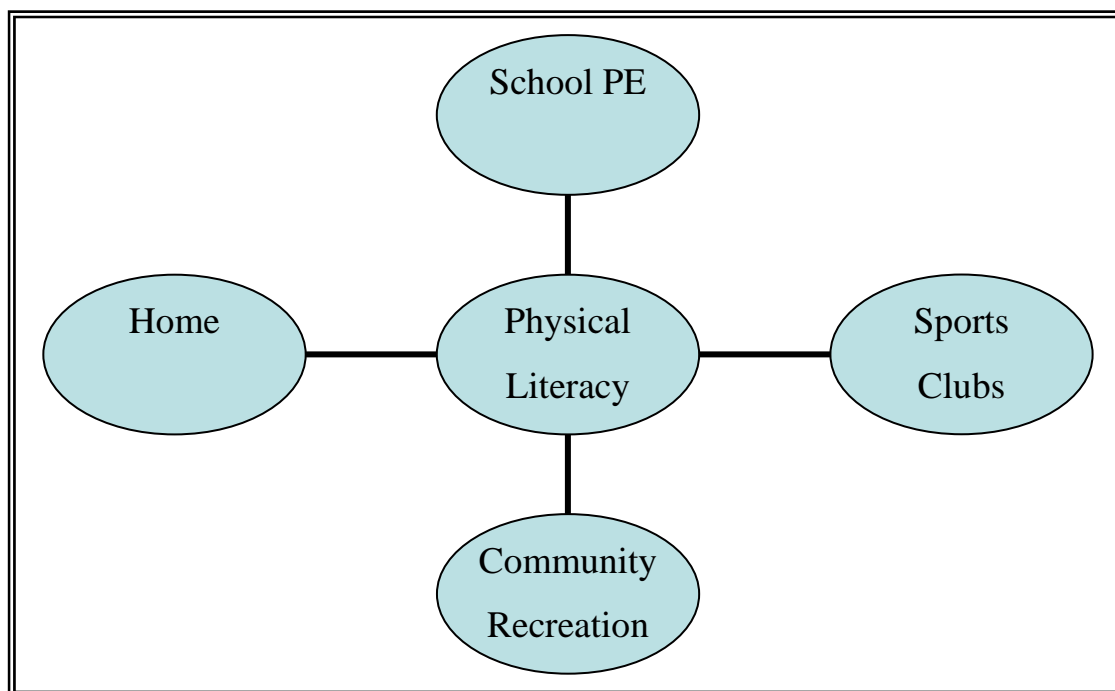


Figure 7: Physical Literacy – Planned Delivery

Children need to practice their fundamental skills for hundreds of hours in the playground at school, in recreation programmes, at home and within sports clubs

“Fundamentals of movement do not generally appear naturally but they are developed through appropriate interventions and environments for learning and attainment-acquiring physical literacy via deliberate play opportunities” (Cote and Hay 2002 pg. 485)

Implications for Coaching and Coaches

Many nations are currently re-examining their approach to coaching children. Sports Coach UK have developed a Coaching Children Curriculum, on the basis that a “one size fits all approach to coaching and coach development will not meet the needs of all participants” (Sport Coach UK Coaching Children Curriculum 2011 pg. 1). In New Zealand, Kiwi Sport have developed a Fundamental Skills programme based on the premise that ‘Children are not small adults, and that their needs and priorities are very different to those of adults’. Youth Sport Trust have developed a multi sports clubs programme that addresses the specific need to ensure that children learn the fundamental movement skills. In Canada some National Governing Bodies (NGB’s) are starting to change the way they think about physical literacy. “Groups of sports lead by the “on-ice” sports i.e. Ice Hockey, Speed Skating, and Figure Skating are collaborating to introduce young children to the world of skating - working to develop skating skills, on-ice agility, balance and coordination” (Developing Physical Literacy, pg. 21).

All of these programmes have been developed to help children develop the knowledge, skills and attitudes that give them the very best chance of staying active throughout their lives. In order to achieve this, the programmes recognise the need to develop ‘a specialised workforce’ to work on child centred programmes.

An ESRI study in 2005 identified that there were approximately 60,000 volunteer coaches in Ireland, and over two-thirds of these are working at youth level. The situation is similar in the UK and Northern Ireland, “nearly 80% of coaches in the UK coach children” (Sport Coach UK Coaching Children Curriculum 2011 pg.2). A recent study in Northern Ireland found that ‘club coaches accounted for 84% of the coaching workforce, 56% of coaches deliver to children aged 10 and under and 75% to children aged 11 to 16’. From a National Coaching & Training Centre (NCTC – now Coaching Ireland) study conducted in 2005 we are also aware that coaches attend their first coach education course nearly three years after they start coaching. (Haughey TJ, Breslin G. & Brooks R. 2011)

All too often in the past programmes offered to children in sport are watered down/ scaled down versions of adult activity, coaching was conducted without sufficient regard to the principles of child development.

Children’s needs in sport are different to the needs of other populations; therefore the children’s coaches need to be equipped with specific knowledge, skills and attributes to fulfil the needs of children. Coaching should support and promote a development perspective; it is the child and not the sport that should direct the coaching context.

Since the LISPA framework emphasis the significance of the earlier phases, it is vital that the Coach Education Model responds to this and places a higher importance on the development of coaches in this area.

Coach Education Model

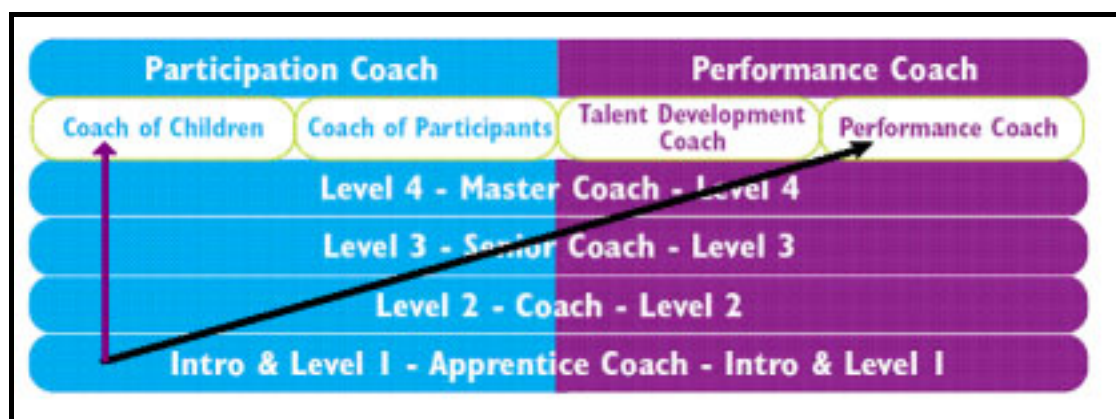


Figure 8: Coach Education Model (Coaching Strategy for Ireland 2008-2012 pg. 11).

In 2008 Coaching Ireland published the “*Coaching Strategy for Ireland 2008-2012*”, which included for the first time a diversified coaching model. Prior to this model the coach education ladder was in place which made the assumption that coach education and development proceeded along the black diagonal arrow (see above). This diversified coaching model highlighted the importance of the needs of the specific population being coached, and the knowledge, skills and competencies required by the coach. Many Irish sports have already started to address the issues that Physical Literacy presents in their own specific education programmes, for example the Football Association of Ireland (FAI) Kick start 1&2, Athletic Association of Ireland (AAI) Little Athletics Manual, Irish Rugby Football Union (IRFU) Mini Rugby,

Gaelic Athletic Association (GAA) Fun to Fame etc. But it is evident that more is required to address the needs of children to develop Physical Literacy. “There is a need for a much stronger focus and investment on the early phases, including Physical Literacy, within coaching and coach education” (NCTC, 2001 pg. 10)

Implications for Coaching

- Develop appropriate generic/ and or sports specific education for children’s coaches (all of which is child centred)
- Continuous Professional Development for coaches in the area of coaching children
- Strong links between NGB coaching awards and populations (developmental appropriate coaching)
- Mentoring Programme for those involved in coaching children
- Further development of the Coach Development Model from Intro to Level 4 Coach of Children (purple vertical arrow in figure 8)
- Develop education for parents, in relation to Physical Literacy and children’s health
- Establish a group with representatives from the four pillars in figure 6 (Home, School, Sport, and Community Recreation) to further develop the thinking on the development and implementation of physical literacy strategies
- Research on the motivations and needs of Irish coaches
- Highlight the role played by children’s coaches
- Comprehensive on-line resource for childrens Coaches

Implications for Coaches

- Become more informed of FUNndamental Movement Skills and sports skills as they relate to the sport they coach
- Learn more about the growth and development of children (emotional/social, cognitive and physical), and how this can impact on the sport/physical activity programme they deliver

- Develop their coaching skills to plan, organise and deliver programmes appropriate to the development stage and ability levels of the children you coach
- Be able to observe, analyse and give feedback on fundamental movement and sports skills
- Within the sports club, link with other coaches both on the sport/physical activity programme for children and the development of coaching skills
- Cooperate with others in the community on the provision of the National Physical Activity recommendations for children
- Inform parents on the revised emphasis of the sport/physical activity programme for children in the club and the role they can play at home
- Ensure an appropriate emphasis is put on competition and winning
- Ensure all the children in the club are assisted in their development
- Coaches should reflect on how well the programme for children in the clubs is going; as well as their own and other coaches inputs to it

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