Improving Physical Literacy

Sport Northern Ireland

TITLE: IMPROVING PHYSICAL LITERACY

SUBTITLE: A REVIEW OF CURRENT PRACTICE AND LITERATURE RELATING TO THE DEVELOPMENT, DELIVERY AND MEASUREMENT OF PHYSICAL LITERACY WITH RECOMMENDATIONS FOR FURTHER ACTION

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1. Purpose

1.1

This paper sets out to investigate issues around the development, implementation and measurement of the area of children's physical development currently referred to as physical literacy (PL). As an emerging concept, there are a range of broadly similar definitions of PL. For the purposes of this paper, PL is defined as:

"The ability to use body management, locomotor and object control skills in a competent manner, with the capacity to apply them with confidence in settings which may lead to sustained involvement in sport and physical recreation."

1.2

The paper describes:

- Some aspects of the background to PL;
- A rationale for developing PL;
- Some of the settings for the delivery of PL;
- A selection of programmes designed to develop PL;
- External influences on the delivery of PL;
- Current tests and measures of physical development;
- Some of the benefits of PL beyond 'the physical';
- Discussion of key issues; and
- Recommendations for the development of a tool to measure PL in the context of current and possible future projects in Northern Ireland.

> **This paper sets out to investigate issues around the development, implementation and measurement of the area of children's physical development currently referred to as physical literacy (PL).**

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2. Background

2.1

During 2005 Sport Northern Ireland (SNI) considered in detail the concept of PL and its delivery in Northern Ireland. In addition, SNI endorsed the policy position that it "supports the work of SNI officers in exploring methods of measuring physical literacy in children …" (SNI, 2005). The 2005 policy position was followed up in 2007 with discussions which provided further contextualisation, examples of good practice and a review of work to date (SNI, 2007). This review builds upon and continues the work which SNI has been engaged in since 2005.

There are a range of tests or measures available to assess aspects of children's physical development, although not all are suitable for the current context. The tests assess characteristics variously described as: "movement skills" (Burton and Miller, 1998), "gross motor skills" (Ulrich, 1985), "basic movement competence" (Jess, 2004a), "gross motor co-ordination" (Larkin and Revie, 1994), and many more.

2.2

The draft Northern Ireland Strategy for Sport and Physical Recreation 2007-2017 identifies PL as a main area for development and a number of the 'Key Steps for Success' are related to it. In addition, specific mention is made of the need to agree a methodology for the measurement of PL and to establish a baseline (Department of Culture, Arts and Leisure (DCAL) 2007). Whilst the content of the draft Strategy has not yet been confirmed, this proposal is thought to have considerable merit.

2.3

Recent SNI revenue funding programmes such as Sport in Our Community have included awards amounting to some £1.3m, which focus primarily on projects concerned with the structured delivery of PL. These projects are delivered in a range of community settings and have associated targets which are congruent with the SNI programme. The targets relate to numbers of teachers or leaders trained, and to numbers of children participating in courses. Missing, however, is any indication of expected standards achieved, or a measure of the competence of the children involved. This is not an oversight on the part of the managers of the projects, but rather a sign that no agreed standard or measure is currently or commonly available.

3. Rationale for developing physical literacy

3.1

The Long-Term Athlete Development (LTAD) model was first proposed in the UK in 1998 (Balyi, 1998). This model was originally a four-stage process, designed for the preparation of elite athletes, but later, the model was developed to include an initial 'FUNdamentals' phase upon which the subsequent stages are built (Balyi, 2002). Together the first and second stages of the LTAD model (FUNdamentals and Learning to Train) represent the period when PL is established.

3.2

The LTAD model, or a version of it, is now the development model of choice for many sports clubs, governing bodies of sport and local, regional and national sports development agencies, across the British Isles and beyond.

3.3

In Northern Ireland, SNI's Participation and Performance Units carry the remit for the development of PL and LTAD respectively. It is apparent, therefore, that PL, as an underpinning concept for LTAD, requires structured, agreed and measurable arrangements for its delivery and outcomes.

> **PL, as an underpinning concept for LTAD, requires structured, agreed and measurable arrangements for its delivery and outcomes.**

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3.4

Pre-eminent amongst British writers in the field of PL is Dr Margaret Whitehead. Her work ranges from the philosophical to the practical and, whilst she acknowledges that a publication from the UK Sports Council (1991) referred to physical education (PE) creating "a literacy in movement", Whitehead may have been the first British writer to develop the concept in any meaningful way. Her paper, 'The Concept of Physical Literacy', discusses the physical dimension of the human condition, proposes a definition and key elements of PL, and sets a range of questions and challenges for the physical education profession (Whitehead, 2001). As the debate develops over the years, Whitehead asserts that methods used in schools for the delivery of PL must "incorporate assessment for learning", but provides no further detail or suggestions (Whitehead, 2007). It is understood that this issue is currently being addressed in work undertaken by the Association for Physical Education (afPE).

3.5

Moving the debate to the level of classroom practice, Hadyn-Davies considers the concept of PL in relation to the work of a number of contemporary writers and, crucially, to the Qualifications and Curriculum Authority's identification of high quality PE outcomes (QCA, 2002). This guide sets out how schools can recognise and achieve high quality PE and school sport (PESS). In particular, it proposes ten pupil outcomes of high quality PESS – what young people might do and say when they are experiencing high quality PESS. Haydn-Davies concludes that the outcomes of high quality PESS, as defined by QCA, are congruent with the definition of a physically literate individual articulated by Whitehead (Haydn-Davies, 2005).

3.6

The afPE is the UK organisation for people and agencies delivering or supporting the delivery of PE in schools and the wider community. Currently, one of its major areas of work is in the development of PE in primary schools. The afPE's Chief Executive, Professor Margaret Talbot, in a speech delivered at Stranmillis University College in May 2007, indicated that the Association specifically supports the development of PL. Indeed, when the Association was founded, after the amalgamation of the Physical Education Association of the United Kingdom and the British Association of Advisors and Lecturers in Physical Education, the first edition of its official journal, Physical Education Matters, was devoted to the subject of 'Physical Literacy and Physical Education' (Association for Physical Education, 2006).

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3.7

'Fit Futures: Focus on Food, Activity and Young People', was a Cross-departmental Taskforce established in Northern Ireland by the Ministerial Group on Public Health in August 2004. The role of the Taskforce was to examine options for preventing the rise in levels of overweight and obesity in children and young people. The Taskforce recommended six key priorities for action:

1. Developing joined-up healthy public policies;
2. Supporting healthy early years;
3. Providing real choice;
4. Encouraging the development of healthy communities;
5. Creating healthy schools; and
6. Building the evidence base.

3.8

Within each of the Fit Futures priorities, the importance of physical activity is stressed, as is the need for education and training in the skills necessary for its delivery. Given the need to address a specific issue – in this case, obesity – the case for a structured, progressive and measurable intervention is clear. The development of PL has a role here in providing the knowledge, skills, understanding and attitudes required for an active, healthy lifestyle.

4. Settings for the delivery of physical literacy

4.1

As suggested previously, the development of PL is a key issue for PE in primary schools. The Declaration of the National Summit on Physical Education in January 2005 states that:

"The aim of physical education is systematically to develop physical competence so that children are able to move efficiently, effectively and safely and understand what they are doing. The outcome – physical literacy – is as important to children's education and development as numeracy and literacy."

4.2

SNI paper SC/05/97 suggested that the primary school is the most important setting for the delivery of PL, and it is arguably here that, given the right circumstances, the potential for the most controlled, structured and successful delivery of PL might occur (SNI 2005 op cit). Whilst this may or may not be the case, other settings have gained in significance in recent years. These include the sport, multi-skill club and play environments.

4.3

Sports clubs and governing bodies of sport in Northern Ireland are increasingly using the notion of PL to work with young people in a way which avoids exposing them to the narrow confines of the skills of a single sport at too young an age. Programmes developed by these organisations often include activities not usually associated with the sport from which they have emerged, and some are very successful. Gaelic games, rugby and tennis are examples of sports with PL programmes. There is, however, the question of whether or not the non-sport specific concept of PL can exist comfortably in a sport-specific environment. This matter, whilst important, is beyond the scope of this paper.

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4.4

Multi-skills clubs have become increasingly popular in recent years. Many local authorities in Northern Ireland now provide opportunities for children to learn a wide range of physical skills in a fun and non-competitive setting, and the use of club names such as 'Wildcats' and 'Cheetahs' provides an extra 'fun' dimension for the young club members. Those who are responsible for the development and delivery of multi-skills clubs generally set them within an LTAD-based sports development continuum. Many of the multi-skill clubs are organised through the District Councils and Area Partnerships in Northern Ireland and are part-funded through SNI programmes. In addition, multi-skill clubs exist within university outreach programmes and in a number of uniformed youth organisations.

4.5

The development of PL through play settings is the most recent, but potentially, one of the most interesting schemes. Sport Northern Ireland has made a substantial investment aimed at developing PL through Northern Ireland's PlayBoard organisation which is in the process of training playworkers to deliver appropriate programmes. The relatively informal play setting has sufficient structure to allow skill development in children, but without the more formal arrangements of organised sport. 'Play Works!', PlayBoard's Strategic Plan for the period 2005-2008 notes that play deprivation can lead to "poor ability and motor skills", and "low levels of physical activity" (PlayBoard 2005). In addition, the draft Strategy for Sport and Physical Recreation 2007-2017 aspires to "promote the understanding of play in the context of physical literacy" (DCAL op cit).

> **Many local authorities in Northern Ireland now provide opportunities for children to learn a wide range of physical skills in a fun and non-competitive setting.**

5. Programmes designed to develop physical literacy

5.1

It is well within living memory that young people being introduced to a sport for the first time were confronted with the full adult version of the game. In the 1960s, it would have been common to see eight and nine year old boys (and only boys) playing eleven-a-side soccer on full-sized pitches and with the goalkeeper wallowing in full-sized goals. A similar picture was true for other sports, for example, a first experience of rugby with one ball between thirty boys cannot have had many positive learning outcomes. It would be naive to claim that all sports teaching is now carefully tuned to the physique, fitness, age, and maturity of all young learners, but the situation has changed significantly in the last forty years.

5.2

Whilst sensitive coaches, teachers and officials will have made allowances for learners, more formal arrangements for progressive learning are now in place. Virtually all sports have 'mini' versions of their games and some have made mandatory the use of small-sided games and/or other adaptations for under-age players. Governing body sanctioned cup and league competitions now exist for the junior versions of most sports, and many of the rules of the adult activity are adjusted for the benefit of the learning experiences of young participants. These commonly include the duration of matches, the size of playing areas, the use of substitutes, the size/weight of implements, the level of physical contact, etc.

5.3

At the same time that sport was moving towards a more measured pattern of teaching and learning, the 'jogging boom', fostered by individuals such as Jim Fixx in the USA in the 1970s, indicated people's growing desire to lead healthy, active lifestyles, without participating in formal sporting activities (Fixx, 1977).

5.4

By the middle and late 1980s, the emergence of health-related fitness or health-related physical education (HRPE) consolidated the notion that recreational physical activity can be health-related rather than just sports-related. HRPE became a compulsory element of the first Northern Ireland PE programme of study and dedicated resource materials were developed for all Northern Ireland post-primary schools during the early 1990s (Northern Ireland Education and Library Boards, 1994).

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5.5

The concept of a general movement competence labelled 'literacy' had begun to crystallise in the early 1990s (paragraph 3.4) and, by the end of the decade, the phrase 'physical literacy' was beginning to enter the lexicon of PE and sport. Programmes which had the effect of developing PL began to emerge, although few specifically used the phrase. A range of these programmes are considered below.

5.6

The Revised Northern Ireland Primary Curriculum
(Northern Ireland Council for the Curriculum, Examinations and Assessment (CEA) 2007). The Physical Education Programme (PEP) for pupils in primary schools is divided into three phases: the Foundation Stage and Key Stages 1 and 2. The PEP is classified under activity areas which retain sport-oriented titles (athletics, dance, games, gymnastics and swimming), but, with the obvious exception of swimming at Key Stage 2, the boundaries between the topics are often blurred by skilled primary PE teachers, particularly with younger pupils.

5.6.1

At the Foundation Stage (years 1 and 2), 'Physical Development and Movement' deals with those areas of learning which will eventually emerge as PE. Here, children should experience and develop a range of fundamental movement skills that will improve:

- Balance;
- Co-ordination;
- Control;
- Locomotion; and
- Manipulation.

5.6.2

The PEP at this stage, is designed to help children gain confidence and self-esteem and to enable them to feel the benefits of being healthy and active. Through taking part in physical activities, children should begin to develop an understanding of safe practices, the relationship between physical activity and good health, and the importance of changing for physical activities. They should develop social skills such as turn-taking, sharing, co-operating and negotiating, and values such as trust, fairness and respect for others.

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5.6.3

At Key Stage 1 (years 3 and 4) and Key Stage 2 (years 5, 6 and 7), children should progress from simple movement explorations and performances to developing increasing competence, control, co-ordination and spatial awareness in a range of physical movement skills, and be able to refine, extend and perform the skills with improved accuracy and consistency.

5.6.4

In each of the activity areas in Key Stages 1 and 2, the PEP describes in detail the things that children should be enabled to do. There is extensive guidance for teachers, with some relevant examples, but, in recent years, the level of outside support available from the Curriculum Advisory and Support Services within the Education and Library Boards (ELBs) has declined dramatically.

5.6.5

It should be borne in mind that, notwithstanding the declaration of the National Summit on Physical Education (paragraph 4.1), PE represents only a portion of the child's total school experience which should be an integrated or 'connected learning' experience, with links across all curriculum subjects and, where appropriate, into extra-curricular activities. PE must play its part in achieving educational objectives far beyond the acquisition of physical skills. These include higher-level aspirations such as the development of self-confidence, which will equip children for their lives as individuals and as contributors to society, the economy and the environment.

5.7

KiwiSport Fundamental Skills
(SPARC, 2007).
Adapted sport-specific activity 'packages' of resources have been in existence in other parts of the world for some years and the publication in 1988 of the KiwiSport resource by the Hilary Commission in New Zealand soon saw the material being used extensively in Northern Ireland. The 'package' was born of a perceived need to provide child-centred introductory sports activities. Initially, all of these activities were adapted versions of adult sports and the KiwiSport sport-specific resources are still available (Sport Auckland, 2007). The 'package' has been extended and now includes a wide-ranging KiwiSport Fundamental Skills (KFS) element.

5.7.1

KFS is designed to help children to acquire a range of skills which will give them feelings of personal success and satisfaction, and will establish a sound base for the time when they are ready to move on to specific KiwiSports and, later, the adult version of the sports.

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5.7.2

KFS aims to develop sixteen different physical skills classified in three groups broadly similar to many of the other resources currently available. The groups are:

1.   Locomotor activities;
2.   Manipulation activities; and
3.   Body management activities.

5.7.3

KFS is a manual of activities and games for teachers, parents and others who want to develop children's fundamental skills in a fun way. It is suitable for PE classes, extra-curricular activities, in community settings and at home.

5.7.4

Importantly, the resource is supported by a network of KiwiSport Co-ordinators in regional sports trusts, whose job is to arrange appropriate training for adults and to advise on the best use of the KFS materials.

5.8

Youth Sport Trust TOPS programmes
(Youth Sport Trust, 2007).
The Youth Sport Trust (YST) was established in the UK in 1994 as a charity aimed at developing and implementing, in close partnership with other organisations, high quality PE and sport programmes for all young people aged 18 months to 18 years, in schools and across the community. It now works closely with the government and operates in more than 400 specialist sports colleges in England and the thousands of other post-primary and primary schools associated with them. The YST also has links in mainland Europe, Asia, Russia and Africa. The YST's core business includes the delivery of a number of interlinked and progressive programmes including the range of TOPS programmes. The organisation is active in Northern Ireland and the first TOP Play programme was piloted here in 1995. TOP Tots, TOP Start, TOP Play and, to an extent, TOP Sport, are the YST programmes which relate most closely to the development of PL and all have important under-pinning educational aspirations.

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5.8.1

TOP Tots is a fun introduction to physical activity and play and is aimed at the 18 months to three years age group. It seeks to use physical activity to develop communication and language techniques, co-ordination, co-operation and social skills. The programme is designed to be sufficiently flexible to be used in a playgroup or nursery environment, or by parents in the home.

5.8.2

TOP Start is focused on developing basic movement and ball skills in the three to five year old age range. It is designed for use with groups of children in pre-school environments and is delivered through a number of games that are organised into four groups:

1.   Basic motor skills;
2.   Co-ordination and control;
3.   Spatial awareness; and
4.   Aiming, predicting and estimating.

5.8.3

TOP Play offers four to nine year olds the opportunity to develop their core physical and movement skills through fun and stimulating activities. These incorporate four key skill areas:

1.   Rolling;
2.   Striking;
3.   Throwing; and
4.   Kicking.

5.8.4

As the name suggests, the TOP Sport programme moves children towards sport-specific situations, but an element of the multi-skills environment remains.

5.8.5

With a range of regional development managers, the YST's activities are supported, but these individuals' work programmes extend well beyond the TOPS programmes.

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5.9

Basic Moves (Jess, op cit).
This programme, developed in the University of Edinburgh, is based on the premise that the basic movements which are the foundations of a lifetime of physical activity, do not simply develop naturally in children. Jess believes that children need to be offered many opportunities for learning over an extended period of time and by a range of knowledgeable adults, in order to master these skills.

5.9.1

There is a total of 37 skills 'Basic Moves' addressed in the programme and they are grouped thus:

- Travel - basic, rhythmical, jumps, and apparatus;
- Object control – send, receive, travel with, receive and send; and
- Balance – postural and co-ordination.

5.9.2

Jess sets these Basic Moves within a more complex matrix of movement concepts reflecting the ways in which they are adapted, evolved and applied in the increasingly complex and dynamic situations which might eventually be found in sport:

• Space	o Space o Direction o Pathways o Levels
• Effort	o Speed o Force o Flow
• Relationships	o Body parts o Objects o People

These 'space', 'effort' and 'relationship' parameters are used in PE programmes in many parts of the world, including the USA, Canada and Russia, and derive from the work of choreographer Rudolph Laban.

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5.9.3

Critically, Jess advocates the replication of the programme across school and community settings. He argues that, without this degree of consistency, the full impact of the programme will be compromised (Jess, 2004b). This is a matter of some relevance, given that, to date, there has been little opportunity to achieve such consistency across programmes currently operating in Northern Ireland.

5.9.4

The Basic Moves programme has been developed with support from Sportscotland and is being delivered in many schools throughout Scotland and beyond. A national Continuing Professional Development programme (CPD) for teachers and relevant others is currently in place, with over 2500 individuals already trained. An evaluation of the programme is currently in preparation and 'Early Moves', 'Dance Moves' and 'Aqua Moves' are all initiatives which have grown from the original programme.

5.9.5

The report of the Review Group on Physical Education in Scotland recommended a range of measures which have the potential significantly to improve PE in Scottish schools (Scottish Executive, 2004). This, at a time of falling levels of physical activity in the Scottish population as a whole, may help to consolidate the position of Basic Moves in Scotland.

> **The foundations of a lifetime of physical activity, do not simply develop naturally in children. Children need to be offered many opportunities for learning over an extended period of time and by a range of knowledgeable adults.**

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5.10

Fundamental Movement Skills (FMS)
(Department of Education WA, 2001).
Developed in Edith Cowan University, Perth, Australia and marketed in the United Kingdom by Steps PD, this resource is now in use in schools in Northern Ireland. CEA provided considerable assistance in introducing the programme to Northern Ireland schools, and all five ELBs have adopted it as a favoured programme for primary schools.

5.10.1

For the last few years, the ELBs have offered in-service training for teachers who wish to adopt the programme in their schools and curriculum resource materials have been produced locally, to help teachers align the content of the programme with the requirements of PEP. The two-day training programme has attracted over 500 teachers and approximately 30 individuals who are now qualified to offer the courses across Northern Ireland. Importantly, the two main institutions of primary teacher education now contain staff who can deliver the training course to their students.

5.10.2

Three of the ELBs have employed Physical Literacy Co-ordinators (PLCs) to assist already-trained teachers to develop best practice in their classrooms. These individuals work alongside the teachers providing support for teaching, learning and planning, etc. In addition, the PLCs are tasked with advocating the development of PL in all primary schools and with liaising with key individuals in the community. The three PLCs are funded by Sport Northern Ireland.

5.10.3

The FMS programme seeks to develop a range of 22 skills in three categories. These are:

1. Body management skills;
2. Object control skills; and
3. Locomotor skills.

5.10.4

The rationale for the programme stresses the objective of maximising the health and well-being of children through lifelong physical activity, and promotes proficiency in fundamental skills in order to facilitate this. Considered by many to be of central importance in this programme is its emphasis on the integration and valuing of the social, emotional, cultural, linguistic, creative, spiritual, and cognitive needs of children as well as their movement skills.

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5.10.5

The FMS programme is described positively in SNI paper SC/05/97 (SNI, 2005 op cit) and this position is broadly supported in paper SC/07/27 (SNI, 2007 op cit). To date, anecdotal reports from the ELBs and from schools strongly support this position and an evaluation carried out by CEA has been positive. However, the CEA evaluation was modest in scale and relied solely on an evaluation focus group of eleven teachers. No empirical evidence appears to have been gathered and none was reported (CEA, 2006).

5.10.6

Despite an impression that the programme has the approval of the Education and Training Inspectorate, which provides inspection services for and advice to the Department of Education in Northern Ireland (DENI), no overt support or funding from this source has been forthcoming.

5.11

Skills 4 Sport (S4S)
(Coaching NI, 2007).
The S4S programme was developed by Coaching NI at the request of SNI and aims to develop fundamental movement skills and fundamental sport skills in young people. It asserts that a multi-skill approach is critical to the eventual development of sport-specific skills and will encourage young people to begin and maintain lifelong involvement in sport and physical activity.

5.11.1

Like other programmes, S4S is constructed around a set of key principles. These 'FUNdamentals of movement' are:

1.   Agility;
2.   Balance; and
3.   Co-ordination.

5.11.2

Whilst the FMS and Basic Moves programmes are fairly didactic, constructed around actively teaching children HOW to run, HOW to catch, HOW to throw, etc., the S4S programme has a much more deliberately applied focus. Detail is provided on some of the key features of kicking, throwing, catching, etc., but the major part of the resource is devoted to a collection of 30 games which apply the skills in co-operative, competitive, group, pair and individual situations.

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5.11.3

The S4S training programme is designed for individuals who are already qualified coaches in one or more sports and this provides some justification for the more applied nature of the programme. Importantly, the observation, analytical and feedback skills of practicing coaches have been found to be generally superior to those who do not have a sports background.

5.11.4

Reflecting Jess's assertion regarding the integration of programmes in schools and in the community (paragraph 5.9.3), the S4S programme advocates a similar approach and specifically mentions the FMS programme in Northern Ireland schools.

5.11.5

S4S training programmes are being delivered sporadically across Northern Ireland, often by the Area Partnerships and are supported by Sport Northern Ireland. The implementation of the S4S programme is predominantly seen in District Council multi-skills clubs (paragraph 4.4).

5.12

Gaelic Games Fun Do and Fun to Fame resource packs.
Reservations have already been expressed regarding the development of PL programmes within sport-specific environments (paragraph 4.3), but two resources developed in Ireland go some way to challenging this position, owing much to the nature of the sports which they support or underpin. The Gaelic Athletic Association (GAA) as a governing body of sport is unusual in that it presides over two major and separate activities. Gaelic football and hurling are activities which embrace a very wide range of physical skills, including almost all of those found in the more traditional non-sport specific programmes described above.

5.12.1

The Fun Do Learning Resource Packs are designed separately for Gaelic football and hurling (GAA, 2007). They are aimed at developing the basic motor skills of players under the age of 12 years and concentrate initially on agility, balance and co-ordination. This 'nursery' phase of the programme leads to sports specific skills for children at the under eight, under ten and under 12 age groups. The separation of the two games and the relatively early acceleration into sports specific skills sets this resource pack apart from the more conventional generic programmes discussed above.

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5.12.2

The Fun to Fame programme is an initiative of the Ulster Council of the GAA. It is designed to be closely aligned to Balyi's LTAD model and translates the principles of the model into a Gaelic games context.

5.12.2.1

The FUNdamentals portion of the Fun to Fame programme provides coaches, teachers and parents with material that will help them deliver 'good' fundamental motor skills in the classroom, at the club or at home. Again agility, balance and co-ordination are central to the many drills provided.

5.12.2.2

The Learning to Train manual is again drills-based and aims to break down the skills of Gaelic football and hurling with a view to developing small-sided games. Interestingly, the drills are designed to allow coaches to differentiate between young players of differing levels of ability. This approach is not congruent with most of the non-sport specific PL resources.

5.12.2.3

The two Ulster-based resources aspire to be reference books for planning and implementing complete games and coaching programmes for children from below the age of five years through to 12 years.

> **Gaelic football and hurling are activities which embrace a very wide range of physical skills, including almost all of those found in the more traditional non-sport specific programmes.**

6. The benefits of physical literacy beyond 'the physical'

6.1

Much of the emphasis on the development of PL has been on its importance in laying appropriate foundations for lifelong physical activity. It develops the knowledge, attitudes, skills and understanding needed to pursue lifelong physical activity, either through performance sport or physical recreation. Many of the programmes discussed above are scrupulous in their attention to detail in identifying and developing what they consider to be the key physical skills which offer the possibility of transferability or adaptation into the activities we know as 'sport'.

6.2

Most of the programmes however, embrace rationales and aspirations which allow them to reside comfortably in educational environments. These rationales are clearly articulated in the PEP within the Revised Northern Ireland Primary Curriculum (paragraph 5.6.5), the FMS programme (paragraph 5.10.4) and, to some extent, the TOPS programmes (paragraph 5.8.1). Whilst the material associated with Basic Moves does not overtly articulate such matters, the programme was developed by educationalists in an institute of teacher education, namely the Scottish Centre for Physical Education, Sport and Leisure Studies, in the Moray House School of Education, University of Edinburgh. Consequently, and as it was designed initially to be delivered in primary schools, it may be safe to assume that a range of higher-level educational values is implicit in the programme.

6.3

In regard to the outcomes of PL programmes beyond the physical, there may be benefits in personal, social and cognitive development.

6.3.1

At the level of the personal development, enhanced self-confidence and self-esteem are traditionally cited as benefits of physical activity in general and PL programmes in particular. Most people appear to take pleasure at learning a new skill, physical or otherwise, conquering a challenge, or "… the achievement of: the mastery of the thing!" (Hopkins, 1877). Henderson May and Umney (1989) demonstrated that children who are proficient in skills such as running, throwing, skipping and balance are more likely to have higher self-esteem and self-confidence. In addition, responsibility and discipline, coping with success and failure, and developing a sense of community, loyalty and cohesion, can flow from appropriate physical activity experiences (Australian Sports Commission, 2003).

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6.3.2

Turn-taking, sharing, co-operating and negotiating, and values such as trust, fairness and respect for others are all social skills described in the Revised Northern Ireland Primary Curriculum as being amongst the benefits to children of taking part in structured physical activity (CEA, 2007 op cit).

6.3.3

Enhanced cognitive development as a direct benefit of physical activity is less easy to demonstrate. In the case of young children, well-designed and delivered PL programmes, within and beyond the school day can lead to high self-esteem, high levels of confidence, loyalty to school and teachers, positive reinforcement, parental support, and good health, and these, in turn, can all lead to academic achievement, but controlling for all of the contributory features makes empirical proof difficult to provide.

6.3.3.1

Hill and Gracia (2006) find a weak but positive relationship between levels of physical activity and learning outcomes. They indicate however that many studies in this area have been hampered by suspect methodologies and suggest that the relationship between the two matters may not be causal. For example, individuals with high levels of physical activity may have higher levels of educational attainment, but that does not mean that the one leads directly and inexorably to the other.

6.3.3.2

Whilst the quality of PL programmes is a key issue for the success of their outcomes, time spent in PE, regardless of its degree of quality can be easily measured. Dollman, Boshoff and Dodd (2006) carried out a study of the relationship between curriculum PE time and literacy and numeracy standards in South Australian primary schools. They were able to control for socio-economic status and a range of other factors, but found that there was no relationship between time spent in PE and levels of literacy and numeracy.

> **In the case of young children, well-designed and delivered PL programmes, within and beyond the school day can lead to high self-esteem, high levels of confidence, loyalty to school and teachers, positive reinforcement, parental support, and good health.**

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7. External influences on the delivery of physical literacy

7.1

Success in most human endeavour depends on a range of factors. Sometimes these come about by happy coincidence, but preferably, planning is involved. In the case of the development of PL in young children, Jess tells us that relying on happy coincidence is not enough (paragraph 5.9).

7.2

Some, but not all of the factors involved in the successful delivery of PL include the quality of the programme, the competence of the individual(s) who deliver the programme, the capacity of the children and the extent and nature of the support the children receive from parents and significant others.

7.2.1

A range of programmes designed to deliver PL has been discussed in section 5. These have all been designed by professionals in the field of PE, education and sport, and generally their quality is high. Each may be championed by its designers as having particular features or nuances which set it apart from, and above, the others, but in general terms, most programmes are 'fit for purpose'. Some have particular design features which are attuned to the environment in which they are delivered and resonances of this can be seen in most programmes.

7.2.1.1

Both FMS and Basic Moves have their roots in primary schools. As such, the child-centred ethos of modern primary education is appropriately embedded.

7.2.1.2

The YST TOPS programmes are designed for flexible use and will work equally well in school and community settings.

7.2.1.3

The S4S programme, used in community-based multi-skill clubs, is delivered generally by individuals with a sports coaching background and the more applied nature of the content reflects this.

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7.2.1.4

The GAA Fun Do and Fun to Fame resources exist within the context of two highly competitive sports and are clear in their intentions appropriately to prepare children for these activities.

7.2.2

The competence of those who deliver the programmes is paramount and different aspects of competence apply to the different programmes.

7.2.2.1

In the majority of cases, the teachers who deliver the school-based programmes are not specialist PE-trained individuals, although they may have attended a number of in-service courses in addition to their initial teacher education. Their great strengths lie in their management of groups of young children, but, prior to receiving appropriate in-service training, their lack of technical knowledge and experience can put them (and the children they teach) at a disadvantage. Experience in Initial Teacher Education and In-Service Training suggests that there is often an 'implementation gap' between what is delivered on a course and what is eventually taught in the classroom. This notion is supported by Martin and Hands (2003). In regard to the delivery of PL in Northern Ireland primary schools, the establishment of the three PLCs (paragraph 5.10.2) has the potential to go some way to addressing this issue.

7.2.2.2

In the case of the community-based programmes (S4S and GAA programmes) those who deliver are sport-specific coaches. There has been the fear that these individuals have come from their sport, wittingly or unwittingly, as 'recruiting sergeants in disguise'. Generally speaking, this has not been found to be the case. In most cases, those who offer themselves for multi-skill type training have already accepted the merits of this approach before they arrive. There are, however, issues around the extent to which the training offered ensures that coaches fully understand the multi-skills approach.

7.2.3

At any given age, children have differing capacities for physical competence and different capacities for learning. Between the ages of four and ten, the age span of any single primary school class or club group will have a significant impact on the readiness of the children to learn. For example, in year one of a Northern Ireland primary school, there could be a 28% difference between the ages of the youngest and oldest members of the class. This difference could be greater in a community setting where the age range of the participants could be greater. This can have an impact on the outcomes of a programme, even when it is delivered by a highly skilled teacher or coach.

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7.2.4

The extent and nature of support from parents and significant others can take the form of genetic predisposition and environmental support in the case of parents and role modelling and encouragement from others.

7.2.4.1

It is a cliché to say that, to do well in sport, one must first choose one's parents very carefully, but, like all clichés, there is more than a grain of truth in it. Evans (2007) regrets the fact that the matter of pupil ability in PE has lost ground in favour of issues of personal and social development, health, equality, social inclusion and citizenship.

7.2.4.2

Parental support in terms of providing a healthy, active lifestyle with varied opportunities for purposeful play, although not necessarily structured play, is important. However Raudsepp and Pall (2006) have shown that the children who engage in physical activity of a similar type outside school develop enhanced levels of mastery of the skill. In addition, a child who absorbs a home culture which values physical activity may be more likely to develop positive attitudes to physical activity in later life.

7.2.4.3

Welk (1999) demonstrates that siblings and peers can have an influence similar to, or even greater than, parents on children's physical activity habits.

7.3

Separating the relative importance of each of the four issues discussed above is problematic. To differentiate between programme quality and deliverer competence is even more challenging. However, it is likely that the quality of the programme and the competence of those who deliver it are more easily controlled through the efforts of education authorities, community organisations and governing bodies of sport than are children's capacity and parental and peer influence. This will be discussed further in section 9.

> **A child who absorbs a home culture which values physical activity may be more likely to develop positive attitudes to physical activity in later life.**

8. Current tests and measures of physical development

8.1

The need to assess and measure PL was established in SNI paper SC/05/97 and is reinforced in section two of this report. This section of the paper discusses a range of existing approaches to assessment and measurement.

8.2

The words 'physical development' in the heading for this section of the paper are not accidental. With the concept of PL still in its infancy, it is hardly surprising that there is, as yet, no agreed set of protocols to measure its efficacy. However, we can learn much from considering the merits and de-merits of some existing tests and measures of physical development.

8.3

Burton and Miller (B&M) (1998 op cit) provide us with a comprehensive guide to tests of movement skill and discuss the rationale for selecting one or another. They identify five fundamental reasons for assessing movement skill:

1. To categorise or identify;
2. To plan treatment or instructional strategies;
3. To evaluate change over time;
4. To provide feedback to the performer or to some other interested party; and
5. To predict.

8.4

B&M point out that it is necessary to be clear about the purpose of assessing before an appropriate tool can be chosen. This decision will involve one or more of the assessment categories and will direct the assessor towards one of the two fundamental modes of assessment - qualitative assessment or quantitative assessment. These modes are also described as 'process oriented' and 'product oriented', that is to say, focusing on how an action is carried out or focusing on the outcome of that action.

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8.5

Until the Second World War, most tests were quantitative in nature. They relied on amassing banks of normative data and comparing subjects to the norms. These would include the MacCurdy Test (1933), the Brace Test (1927) and the Sargent Test (1921). Most of these were simple performance-based tests measuring speed, strength, co-ordination, endurance, etc. Interestingly, a simplified version of the Sargent Test is still in use today. This is the vertical jump used to measure explosive leg strength and co-ordination.

8.6

As understanding of child development evolved in the mid-part of the twentieth century, tests to determine appropriate development-for-age began to be developed. In addition, the emergence of occupational therapy, physical therapy and neuropsychology required the creation of appropriate tests, specific to their scientific discipline.

8.7

B&M indicate that test items in most available tests can be categorised as tests of motor ability or tests of movement skill. Motor ability is defined as a general trait which underlies the performance of several movement skills. So, for example, balancing stationary on one foot is an example of a motor ability, whilst walking along a narrow balance beam is a test of motor skill.

8.8

Some of the more common tests discussed by B&M are discussed below.

8.8.1

The Bruininks-Oseretsky Test of motor proficiency.
This test is commonly used in adapted PE, occupational therapy and physical therapy, particularly in the USA. It is used very widely in adapted PE and the long form of the test uses up to 46 tasks. A shorter form of the test involves 14 tasks and the designers estimate that the two forms take 60 minutes and 20 minutes each to perform. B&M indicate problems with the validity, reliability and practicality of this test.

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8.8.2

The Movement Assessment Battery for Children Test.
Eight tests of manual dexterity, ball skills and balance are completed by children, with results differentiated by age. A 'total motor impairment' score can be supplemented with qualitative tester comments regarding the child's performance, behaviour and physical defects. Again, B&M express serious reservations about this test and their doubts are supported by others working in the field.

8.8.3.

The Test of Gross Motor Development (TGMD).
Designed and developed over time by Dale Ulrich, this test is one of the most common in the area of fundamental movement skills. The TGMD is both criterion and norm-referenced and can be administered in 20 minutes. A total of 45 criteria are spread over 12 fundamental movement skills and B&M commend it for its flexibility and ease of use. Having said this, they have concerns regarding the level of skill needed by the observer/tester in 'reading' combinations of actions in each skill area.

8.9

Hands (2002) discusses methods of measuring fundamental movement skills and, perhaps because she is a researcher based in Western Australia, the home of the FMS programme, she directs her thinking more toward the practical application of the discipline of measurement than the rather more theoretical approach of B&M. Hands spends little time discussing quantitative methods of assessment, pointing out that they are best used simply to identify who is the fastest runner, fastest swimmer or highest jumper.

8.10

Hands illustrates the relationship between quantitative and qualitative testing in reporting a piece of work by McIntyre in 2000. This study reveals a convergence in the results of the two forms of testing as subjects become more proficient and older. In other words, as an individual becomes more mature and more skilled at, say, sprinting, they will also become faster.

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8.11

Hands' contribution in regard to qualitative measurement is discussed in more detail below.

8.11.1

Knudson and Morrison (1997) define qualitative assessment as: "the systematic observation and introspective judgement of the quality of human movement for the purpose of providing the most appropriate intervention to improve performance", or, as Hands summarises it: "how the skill is performed".

8.11.2

Hands points out that there are two main schools of thought which determine the approach to qualitative measurement - the Global or Whole Body Approach (WBA) and the Component Stage Theory (CST). In essence, the WBA claims that, in terms of physical development, all body components (arms, legs, trunk, etc.) progress in unison towards greater levels of efficiency, whereas the CST says that each body component develops at its own rate and should be assessed independently. Furthermore, Robertson, the advocate of CST says that even within a body component, such as the arm, the upper and lower parts may also develop at different rates.

8.11.3

Most models of assessment associated with fundamental movement skills use an adapted version of CST, identifying the key actions of the main body parts in the proficient form of an action. This helps to address the issue of the complexity of movement mentioned in paragraph 8.8.3.

8.11.4

In order to try to control the potential complexity of the process, a 'mastery' or 'proficiency criteria' model has been used in two major studies in Australia. The Schools Physical Activity and Nutrition Survey (NSW Dept of Health, 2004) used seven fundamental movement skills in a range of age groups in 1997 and 2004. Here, the 'proficiency criteria' were simply expressed as 'mastery' and 'near mastery'. Whilst this study was not solely concerned with PL, this protocol seems somewhat simplistic.

"Any assessment tool should be comprehensive, valid, explicit, educative and fair."

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8.11.5

Hands asserts that any assessment tool should be comprehensive, valid, explicit, educative and fair, but does not offer support for one tool over another. She does however, discuss the merits of the **McCarron Assessment of Neuromuscular Development (MAND)** test, particularly in its use of qualitative, quantitative and combined approaches. The MAND test is a standardised test of motor skills comprising ten tasks, including five tests of gross motor skills and five tests of fine motor skills. In addition, it is known that a current Australian research project is using the MAND test to validate a study of the FMS programme.

8.12

The Basic Moves programme includes a model for assessing the quality of children's movement. In common with other similar programmes and congruent with the work of Gallahue and Ozmun (1998), three broad developmental phases - immature, transitional and mature - are identified for all movements. These are set within a matrix for each skill, e.g. for the overarm throw, the elements of the matrix are preparation, execution and follow-through. Each element of the matrix within each developmental phase has a number of descriptors which will allow the teacher to assess the child. It is understood that an evaluation of the Basic Moves programme has been carried out using a version of the Ulrich TGMD.

8.13

The assessment strategy for the **FMS programme** includes detailed skill criteria for all 22 FMS skills. These range from four skill criteria for the skip to eight for each of five other FMS skills and some skill criteria are more important than others. This brings the total of all skills criteria for all FMS skills to 136. Potentially, over a suggested period of three years and with a class of, say, 25 pupils, a grand total of 3,400 skill assessments could have taken place. In addition, it is suggested that teachers assess children's performances of the skill in formal and informal settings such as during PE, and during playtime, etc. Finally, the teacher can record the pupil's overall performance as 'Beginning', 'Developing', 'Consolidating' or 'Generalising'. This programme also provides a set of four norm-referenced diagnostic tests for children whom teachers think may have a motor learning difficulty. It appears to be generally accepted by local practitioners that this scale of assessment is excessive.

8.14

Observing Children Moving is a CD-ROM based resource designed to assist teachers to observe and analyse children's movement. It aims to enhance knowledge and the understanding of stages of movement development and to produce high quality movement education and PE. Accompanying each of the 12 movement capabilities are observation tasks and grids analysing the movement patterns of each child.

9. Discussion of key emerging issues

9.1

The Northern Ireland context and the potential for development.

9.1.1

A significant amount of high quality work has been done in Northern Ireland to develop the PL of children through structured, research-inspired and professionally driven programmes. There appears to have been a fairly modest level of consultation between the key stakeholders in the selection, development, establishment and co-ordination of the programmes currently in use in Northern Ireland and this has the potential to compromise the very positive impacts that each could have.

9.1.2

With the emergence of the Northern Ireland Physical Literacy Forum, there now exists an environment where like-minded individuals can share experiences and learn from each other. Achieving a level of coherence may be possible through refining at the margins the programmes discussed above and considering each in the light of the others. It is unlikely that any core principles would need to be surrendered, for indeed, most of the core principles evident in the programmes are both similar and sound.

9.1.3

As discussed in paragraph 4.2 and given the compulsory nature of schooling and the consistent and extended period for which children attend school, the primary school is likely to be the principle site for the delivery of PL. However, other professionals working in community settings have much to offer in terms of their technical expertise and other skills and qualities. Given improved co-ordination and co-operation hinted at above, these individuals and the settings in which they work offer an important degree of continuity in the experience of children as they mature and will have an impact on the sustainability of the delivery of PL. This will be discussed further in paragraph 9.5.3.

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9.1.4

The question of the place of the governing bodies of sport in the delivery of PL has yet to be discussed and agreed, although their potential impact in this area of work appears to have been endorsed by an initiative of the DENI in September 2007. This sparked significant levels of debate among educationalists and sports organisations as to the role and function of teachers, coaches and others in developing physical literacy in children within the Northern Ireland education system. However, as mentioned in paragraph 4.3, this is beyond the scope of this paper.

9.2

Age ranges and inconsistencies between programmes.

9.2.1

There are inconsistencies in the age ranges discussed in the programmes described above. Some were designed for use in educational settings where progression is not compatible with the situation in Northern Ireland, and few properly accommodate individual difference. For example, Balyi's LTAD model suggests that the stages of development correspond with particular chronological ages, but Balyi himself has asserted in discussion that individual children's development patterns do not always conform to the expected 'norms'.

9.2.2

For this reason, it may be appropriate to regard the published age ranges as 'guidance' rather than 'direction'. In individual learning environments, the skilled practitioner is the person who can provide differentiated activities to accommodate the range of abilities before them and this applies as much to the field of PL as it does to literacy and numeracy.

9.3

Programme quality vs. teacher competence.

9.3.1

Paragraph 7.3 raises the issues of the relative merits of the quality of the programmes which children experience and the competence of those who deliver the programmes. It is clear that there is a relationship between the two issues, and deficiencies in either can diminish the quality of a child's experience. Much has been done to raise standards in each and programme quality in particular is discussed in detail in section five.

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9.3.2

The rationale, structure and format evident in each of the programmes described would suggest that most were designed by professionals with educational and sporting backgrounds and, as such, offer children a potentially sound, developmental and positive experience. That being said, the child's experience of the programme is inevitably filtered through the 'lens' of the teacher's competence.

9.3.3

Initial teacher education and coach education, along with CPD in both settings, are crucial to the appropriate delivery of programmes designed to develop PL. Strengths and weaknesses in education/training programmes are discussed in paragraph 7.2, but it would be appropriate to take note of the emerging UK Coaching Framework (2007), and the draft Strategy for Sport and Physical Recreation 2007-2017, both which set out detailed plans for the development of the coaching workforce.

9.3.4

Given the complexity of the issue of teacher/coach competence, the range of abilities encountered in schools and clubs and the significant amount of work currently being undertaken in this very dynamic field, it may be more productive to focus, at this stage, on the impact of programme quality upon children.

9.4

The tests available - merits and de-merits.

9.4.1

The measuring and/or assessment tools described briefly in paragraphs 8.1 et seq., fall broadly into two categories. There are those developed with assessment for learning in mind, and those which are more suitable for use as a diagnostic for children with movement difficulties. The former are integrated into the programmes which they support and the more diagnostic tools 'stand alone'. In short, one model is educational and the other is medical.

9.4.2

Clearly there are opportunities for adopting and adapting tests to support or validate each other, but in the current context, the need for practicality could be argued to be predominant over the need for detail. For example, B&M mention the relative convenience of tests which require only twenty minutes per child to administer, but this is useful only when compared to tests which take forty minutes and is of little value to teachers and others working with large groups of lively children and with limited time available.

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9.4.3

Another way of considering the differences between the two approaches is to think of the educational models as representing assessment for learning, whereas the medical models represent the assessment of learning.

9.5

Some basic principles for the development of a measuring tool.

9.5.1

With regard to the recommendations made in paragraphs 10.2 - 10.9 of this report, it will be necessary to make a decision about the 'starting point' for the design of a suitable tool. If a purely research-based approach is to be adopted initially for use in schools, then the presence of FMS in Northern Ireland might be discounted. A tool could be designed to reveal the relative levels of PL across a broad range of children. This range could be identified to include children who have encountered structured programmes designed to promote PL and those who have not. When sufficient data has been gathered and analysed it would then be possible to provide an educated commentary and ultimately evaluate the effectiveness of those structured programmes.

9.5.2

On the other hand, if a more expedient approach is to be taken and FMS is assumed to be 'the only show in town', then a more direct approach can be taken. In this scenario, direct comparisons can be made and this could allow for a smaller sample size to be used - identifying - as it were – 'FMS schools' against 'non-FMS schools'.

9.5.3

In any event, there are some basic principles which might be adopted at the outset. It is fairly certain that the quantitative measuring of children's ability to jump high, throw far, sprint fast, etc, is of little value for children of primary school age. In a learning environment and at this age, the process of mastering a technique is more important than the immediate output in terms of distance or time.

9.5.4

A qualitative measuring tool will consider the accuracy, reliability and adaptability of a movement pattern and will report on it in terms of mastery. Ultimately, this may lead to enhanced effectiveness in terms of distance or time, but measuring these features belongs elsewhere.

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9.5.5

There is an aspiration to design a tool which can be used by a team of researchers in the first instance and, later, by teachers and coaches on a day-to-day basis. In order to achieve accurate, consistent and valid results, appropriate initial training is essential and continuing support, perhaps through mentoring and monitoring is also necessary.

9.5.6

A combined research model of observational and subject-reporting tools is preferable. Complementing observed, reported and assessed patterns of movement with participant and teacher reflection has the potential to provide a comprehensive picture of pupil experiences and may give some indicators for future involvement. This is not to hint at some form of talent identification - this could come much later - but rather to suggest that competence and confidence may work together to facilitate lifelong involvement in physical activity (Abney, 2007).

9.6

The need for practicality.

9.6.1

The primary school gym and the multi-skills club are busy places. If the measurement of PL is to be a feature of assessing for learning, for planning and for diagnosing, it must be possible for teachers and coaches to apply a measuring tool quickly and effectively, within the context of a normal or near-normal lesson or session. In addition, the recording and reporting of outcomes should be straightforward and relatively quick. The design of a measuring tool should attend to these features, but much too will depend on training and on-going support. Teacher and coach confidence in using a measuring tool will depend on the twin issues of the design of the tool and their ability to use it. These features can be developed early, but continuing support is a matter for the relevant agencies to define.

9.6.2

All of this provides a significant challenge for the designers of the tool. It must be robust enough to command a degree of professional respect amongst other researchers and it must be 'useable' enough to be embraced by practitioners. It may be that a tool with a number of components could be used in its entirety by researchers during a short period in the field, but that the individual components of the tool could be used separately by teachers and coaches over a more extended period of time. This matter requires further discussion.

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9.6.3

The need for sustainability is paramount in a long-term project such as the development of PL, but there are significant resource issues which need to be addressed. The recent establishment of PLCs in three ELBs offers some options for mentoring and other forms of support, but the argument for sustainability would suggest the need to mainstream these posts and to extend provision across the whole province. In addition, if mentoring and support are appropriate for the school setting, they are equally relevant in the community setting. Organisations such as the Northern Ireland Physical Literacy Forum may have a role at an operational level in providing some forms of support, including monitoring and evaluating, to those who deliver PL.

9.6.4

It is crucial to recognise that, where external funding is used to provide posts and programmes, sustainability will depend on the ability of the programme managers to demonstrate positive outcomes, achievement and impact.

9.6.5

In order to give the project life, an individual capable of monitoring, co-ordinating and promoting PL is required. Within the context of the draft Strategy for Sport and Physical Recreation 2007-2017 in Northern Ireland, this may be possible. With the likelihood of PL being an important feature of this Strategy, its development might be seen as being within the remit of whoever is responsible for the implementation of the Strategy, but it is accepted that this may be dependant on many other factors.

9.6.6

Embedding PL's core principles, beliefs and values in the thinking of government departments and sports is of paramount importance. The draft Strategy for Sport and Physical Recreation 2007-2017 embraces PL as an important area for development, but recognition of PL by other government departments will move it to another plane. To achieve a level of formal recognition for the importance of PL at DENI would clearly be significant and could have real implications for schools' policy in the future. In addition, a similar level of recognition at the Department of Health, Social Services and Public Safety could have an impact at community level. Pursuing this type of acknowledgment should be considered as a matter of some importance.

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9.7

Measuring the affective domain.

9.7.1

The affective domain refers to feelings, sensations, emotions, and impressions. This will determine an individual's attitude to work, play, recreation, etc. and will have a critical impact on the motivation to teach, learn and ultimately, in this case, to participate in lifelong physical activity.

9.7.2

Consideration needs to be given to measuring the affective domain in children in connection with their experience in schools. Within the area of PE and sport, participants, teachers and coaches recognise that self-esteem and self-confidence are areas which can be developed and, indeed, eroded, fairly quickly and visibly. The Revised Curriculum is clear in its articulation of this feature of PE and it is equally recognised in sport. Given this, it could be considered remiss to omit this aspect of physical activity.

9.7.3

Measuring the emotional responses of younger children is a specialised task partly because young children lack both self-awareness and language, and appear, for example, to confuse 'liking' something with 'being good at it'. There are some simple tools available for allowing young children to express their feelings in this domain and these should be considered.

9.7.4

Measuring the affective domain in adults is a more straightforward matter. With regard to the FMS programme, the CEA evaluation points to significant feelings of empowerment, enthusiasm and confidence. Research could reveal the extent of these feelings and others in teachers and coaches who have been trained in structured PL programmes and those who have not.

10. Recommendations

10.1

The design of any research tool depends on a number of crucial and disparate factors. These include, amongst other things, the purpose of the research and the available resources (human, financial and time). Some of these are beyond the scope of this paper, but some key recommendations are offered below. These recommendations relate, in the main, to the development of a 'tool' to measure physical literacy recognising the context provided by current PL projects in Northern Ireland and the potential for new projects to emerge in the future.

10.2

The purpose of the study should be to assess the learning outcomes of structured programmes designed to develop PL for children in Northern Ireland.

10.3

The study should compare a range of representative fundamental movement skills in children who have experienced structured programmes with a similar number of children who have not experienced such programmes.

10.4

The main element of the study should be the observation of children's quality of movement in the fundamental movement skills identified.

10.5

Interviews with children and/or teachers with regard to the affective domain should also be considered, depending on resources. However, a combined methods approach of this type would provide a much more robust outcome.

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10.6

The study should be carried out in schools initially, but should be sufficiently flexible to allow it to be used in community settings.

10.7

Whilst the initial study should be carried out by specialists in the field of PE and sport, a modified version of the tool should be developed for use by non-specialists, after minimal training in order that it can be used on an on-going basis 'in the field'.

10.8

The final report associated with the study should provide recommendations for the further development of PL in Northern Ireland.

10.9

The final report should be made available to relevant agencies in Northern Ireland and beyond.

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Appendix 1

Membership of the Northern Ireland Physical Literacy Forum "Task and Finish" Research Sub Group:

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Brian Delaney	Senior Lecturer, Health and Leisure Studies, Stranmillis University College.
Paul Donnelly	Policy, Planning and Research Manager, Sport Northern Ireland
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Neil McGivern	Assistant Advisory Officer – PE and Sport Project/Sports Development.
David McKee	Head of Teaching and Learning, Physical Education, Stranmillis University College.
Libby Mailey	Primary Physical Education Liaison Officer, North Eastern Education and Library Board.
Dr Marie Murphy	Head of School of Sports Studies & Co-Director, School of Sports Studies, University of Ulster.
John News	Participation Manager, Sport Northern Ireland
Iris Scarlett	Assistant Advisory Officer, Creative and Expressive Studies (Physical Education), Southern Education and Library Board.
Paul Whitten	National Development Officer (NI), Youth Sport Trust.
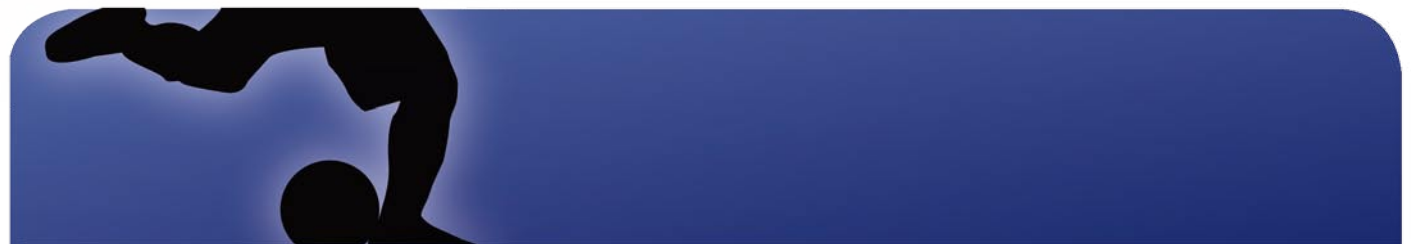
Appendix 2

Glossary of terms:

afPE	Association of Physical Education
CEA	Northern Ireland Council for the Curriculum, Examinations and Assessment
CST	Component Stage Theory
CPD	Continuing Professional Development
DCAL	Department of Culture, Arts and Leisure
DENI	Department of Education in Northern Ireland
ELBs	Education and Library Boards
FMS	Fundamental Movement Skills
GAA	Gaelic Athletic Association
HRPE	Health-related physical education
KFS	KiwiSport Fundamental Skills
LTAD	Long-Term Athlete Development Programme
MAND	McCarron Assessment of Neuromuscular Development
PE	Physical Education
PEP	Physical Education Programme
PESS	PE and school sport
PL	Physical Literacy
PLCs	Physical Literacy Co-ordinators
QCA	Qualifications and Curriculum Authority
SNI	Sport Northern Ireland
TGMD	Test of Gross Motor Development
WBA	Whole Body Approach
YST	Youth Sport Trust

Notes

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