

Gross Motor Skills for Children with Special Educational Needs: An Approach to Early Intervention

An increasing number of children have some impairment in motor development. This article sets out an early intervention programme for children with Special Educational Needs. The programme is designed to improve their gross motor skills with a view to ensuring greater participation in and enjoyment of physical activities.

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INTRODUCTION

The Introduction to the Primary School Curriculum (Department of Education and Science [DES], 1999) emphasises the contribution of Physical Education (PE) to the child's personal, social, emotional and cognitive development, as well as meeting their physical needs. By the time they start school at four years of age most children are expected to have acquired the basic movements to enable them to benefit from PE classes and to develop the skills for participation in games. However, an increasing number of children have not acquired these skills at pre-school level (Deli, Bakle and Zachopoulou, 2006). Additionally, the passing of the Education for Persons with Special Educational Needs (EPSEN) Act means that inclusion will be the preferred option for many children with Special Educational Needs (SEN) and this population, in particular, are likely to have difficulties with motor development. Stewart (1990) consulted physiotherapists who quoted figures of seven out of ten children in special schools and three out of ten children in mainstream schools as having some impairment in motor development. Therefore, many children with SEN will need support in the area of movement in order to ensure participation in, and enjoyment of, both PE classes and physical activities in the yard.

Children who have movement difficulties are generally believed to face many challenges. Being poorly co-ordinated from an early age often means that children are rejected and then isolated from their peer group. This rejection can lead them into a cycle of non-participation, reluctance to learn new skills, resistance to practice, lack of confidence, and declining self-esteem (Sugden and Henderson, 1994). Thus, it is important to have good physical activity experiences in the formative primary school years. An early intervention programme would seek to improve gross motor skills and thereby facilitate the acceptance and inclusion of children with movement difficulties.

MOTOR DEVELOPMENT AND CHILDREN WITH SPECIAL EDUCATIONAL NEEDS

Early childhood development takes place across four main areas: motor development, cognitive development, social development, and emotional development. These areas are interconnected and, as the young child matures, development in one area affects all areas to a greater or lesser degree (Macintyre, 2000). Young children are active

learners; physical play is the way through which they explore their environment and facilitate cognitive development, while social play activities enable children to learn about themselves and their relationships with others (Jowsey, 1992) and thus social and emotional growth takes place. Therefore, motor development is a fundamental aspect of every child's learning process and for most children, this development takes place incidentally through play (Auxter, Pyfer and Huettig, 2001).

If children are to take part in all forms of solo and group play then it is essential that they are proficient in the pre-requisite motor skills. These skills develop initially as a response to challenges in the environment or the self (Davies, 1995) but for many children today the opportunities to develop these skills are restricted. Indeed, Deli et al. (2006) found that all of the pre-school children in their recent study had low scores in fundamental motor skills. Children with SEN, in particular, are likely to have limited opportunities for physical and social play and this can restrict their physical and motor development (Auxter et al., 2001).

Children with SEN experience varying degrees of difficulty in acquiring motor skills but motor milestones will typically be reached later than in normally developing children, and tend to remain at initial performance levels for far longer than their peers (Auxter et al., 2001; Sherborne, 2001). Many children with SEN have associated problems in coordination or mobility but some children with specific learning difficulties or autism also have problems in the motor area that need attention (Kirk, Gallagher and Anastasiow, 2003). It is clear, therefore, that many children with SEN who are included in mainstream schools are likely to experience motor difficulties and/or delay.

Participation and Learning

Any child with a physical, motor or sensory impairment is likely to have special needs in PE whether or not they have special needs in other academic areas (Jowsey, 1992). Some children, especially those with physical and/or multiple disabilities, may need adapted physical education programmes. This motor skills programme sought only to address the physical education needs of children with SEN whose needs are not severe enough to warrant support from professionals such as physiotherapists and occupational therapists.

While there is no one blueprint for teaching PE to children with SEN in the mainstream school, the cornerstones of PE for children with SEN are participation and learning (Wright and Sugden, 1999). This gross motor intervention programme incorporates these two cornerstones of participation and learning, where children with movement difficulties have the opportunity to acquire and practise fundamental skills individually, thereby enabling them to participate on a more inclusive basis in the regular PE class and other physical activities.

BENEFITS OF GROSS MOTOR SKILLS INTERVENTION

The main reason for intervening in motor difficulties is that most approaches to intervention work (Kirk et al., 2003); motor skills, by their very nature, improve with practice and repetition. Many children today have poor gross motor skills and Deli et

al. (2006) concluded that the development of these basic skills through organised practice is essential. In addition, physical literacy for persons with SEN must be taught rather than developing naturally or incidentally (National Disability Authority [NDA], 2005).

The Introduction to the Primary School Curriculum (DES, 1999) emphasises the child as an active agent in his or her learning using guided activity and discovery methods to explore the immediate environment. Children with poor motor skills are unlikely to reach their potential across all areas of the curriculum if they do not have adequate skills to benefit from this active learning process. Indeed, Lerner (2003) notes that special instruction is necessary to help children with SEN strengthen the readiness abilities needed for their next learning step. PE, for the young child, has the most potential for influencing progress in other areas of the curriculum and thus early intervention is likely to have far-reaching benefits (Jowsey, 1992).

A recent report from the NDA (2005) highlights the low levels of participation in sport and physical activity by people with disabilities and identifies the poor provision of PE and physical activities in schools as one of the main contributing factors. The early childhood years are critical for establishing a lifelong foundation for learning for all children but especially so for children who deviate from the norm (Lerner, 2003), while physical activities and skill instruction in school increase the likelihood that children with general learning disabilities will participate in physical activity outside of school (Ayvazoglu, Ratcliffe and Kozub, 2004). Early intervention can provide children with the opportunities to practise fundamental skills to adequate levels, thus enabling them to pursue lifelong moving and learning opportunities.

Experience and research show that intervention for young children is very effective (Lerner, 2003) and the early identification of a child's movement difficulties is agreed to be crucial in effective intervention (Stafford, 2000). Between two and seven years of age the development of children's motor skills accelerate, establishing the foundations for a lifetime of movement (Doherty and Bailey, 2003). So, teachers in primary schools are ideally placed to identify the child's motor difficulties and to provide early intervention programmes to enable children to experience success in movement skills (Stafford, 2000).

INTERVENTION PROGRAMMES

When a child's movement difficulties become apparent, decisions have to be made about how best to intervene to address these difficulties. It appears that teachers can accelerate developmental trends by giving specific motor instruction to children with mild and moderate intellectual or developmental disabilities (Kirk et al., 2003) and thus, many different types of movement interventions have been tried over the last number of years. An appraisal of a wide range of movement programmes provided the basis for the final intervention, with several findings being of particular relevance.

Firstly, for young children in general, and young children with SEN in particular, any intervention programme should have a strong developmental basis (Stewart, 1990; Auxter et al., 2001). Any programme with a developmental basis must involve

general motor ability, physical fitness, psychosocial adjustment and emotional adjustment (Stewart, 1990). The most valuable strategy is one that meets the needs of a wide range of learners but that can be delivered by a limited number of personnel. However, for children with differing needs, a strategy that promotes individualised learning is also necessary (Auxter et al., 2001). Studies have shown that gains are not necessarily dependent on the frequency of sessions (Sugden and Chambers, 2003) and it is the quality of practice, not the time involved, that is important (Doherty and Bailey, 2003). Sugden and Chambers (2003) demonstrated that the gains made during intervention periods were maintained even when the intervention ceased. It is vitally important that children with SEN get opportunities to practise skills in a variety of situations in order to aid generalisation. Therefore, the skills taught in the motor programme session should, ideally, be practised in other situations such as the PE class, the schoolyard and at home.

PROGRAMME CONTENT

General motor ability and physical fitness are based around three categories: stability, locomotion and manipulation. Gross motor activities that involve the whole body or major segments of it develop all three aspects of motor ability (Doherty and Bailey, 2003). However, manipulative skills develop later than stability and locomotion so, for children with SEN, it is important to focus initially on essential skills in the areas of stability and locomotion. The core content of a movement programme for children with SEN should include travelling, rolling, balance, body awareness, weight on hands, spatial awareness, rhythmic ability and object manipulation (Knight and Chedzoy, 1997). Important fundamental skills such as body and spatial awareness, balance and co-ordination can be developed through group gymnastics and dance, while stations in a circuit format can provide a variety of activities for individual children or small groups to practise particular skills (Auxter et al., 2001). The psychosocial and emotional aspects of movement are addressed primarily through the subjective skills of body awareness and Relationship Play (Sherborne, 2001), but additionally through pair work, group activities and co-operative play.

Relationship Play, developed by Veronica Sherborne, is based on children working with a partner on movement activities in order to develop a trusting relationship with another person. It aims to develop self-confidence, body knowledge, physical and emotional security and communication, as well as enhancing basic skills such as balance, strength and co-ordination. Whilst relationship play, as envisaged by Sherborne, proposes a more able and mature partner for each child, it can be adapted for other situations. The following activities are suitable where the children will partner each other:

Relationship Play (Sherborne)

- **Cradling:** One child sits between the legs of another and the child at the rear enfolds his partner and then gently rocks from side to side.
- **Horses:** One child on all fours while second child lies across back, progressing to second child astride back.
- **Rolling:** One child sits down while rolling second child up and down legs.

- **Tunnels:** One child on all fours, second child crawls underneath body.
- **Sliding:** One child slides another around the floor by gripping child's ankles.
- **Monkeys:** One child on all fours, other child grips on underneath body.
- **Rowing the Boat:** Partners sit facing each other and grasp each other's wrists; they take turns to lie back and then sit up and lean forward in a rocking motion.
- **Starfish:** One child lies spreadeagled face down on the floor while other child tries to turn him/her over.
- **Back-to-Back Rides:** Children sit back to back and take turns to push each other across the floor.
- **Prisons:** One child sits on the floor with the other between his /her legs and grips the child with arms and legs. Second child tries to escape from prison.

STRUCTURE OF THE INTERVENTION PROGRAMME

For most schools, a programme that follows the timetable of the school year would be appropriate and using one block of eight to ten weeks duration per term would allow time for assessment and evaluation. In order to judge the efficacy of the programme, I would recommend that the children participating be assessed, using an age-appropriate formal movement test such as the *Movement ABC* by Sugden and Henderson, at the beginning and end of the programme.

A copy of the activities of each term's programme could be given to Special Needs Assistants (SNAs) and parents so that they, too, could assist in implementing the programme. It would also be desirable to have SNAs and parents present at initial sessions each term to aid their understanding of how the skills are being developed. Thus, the weekly session using large equipment could be followed by daily practice of the same fundamental skills in the schoolyard and at home with the help and co-operation of parents and SNAs. In this way, repeated practice should ensure that even small improvements are built upon, leading to significant progress. The structure of each hour-long lesson will take the following format:

- Warm-up (10 minutes) – This will consist of group activities to raise the heart rate and get the children moving in a co-ordinated manner.
- Perceptual Activities (10 minutes) – These will work on the essential areas of body and spatial awareness, balance and co-ordination.
- Gross Motor Skills Circuit (30 minutes) – This is the core of the lesson and all of the stations in the circuit are based on the skills of walking, running, jumping, crawling, hopping, etc. As each term progresses the circuit will increase in difficulty and complexity (A sample circuit from each term is shown in Exemplars 1-3).
- Cool Down (10 minutes) – The lesson will end with calm games and activities to enhance or reinforce essential skills and allow the children to wind down before returning to class.

OUTLINE PLAN OF WORK

TERM 1:

Warm Up – Marching and Rhythmic Activities

Perceptual Activities – Body Awareness and Static Balance

Gross Motor Skills Circuit – Floor and Bench work

Cool Down – Action Rhymes and Activities

TERM 2:

Warm Up – Aerobics

Perceptual Activities – Spatial Awareness and Dynamic (moving) Balance

Gross Motor Skills Circuit – Introduce Large Equipment (e.g. trestle table, ladders, mini trampoline)

Cool Down – Cross Laterality Activities and Relationship Play

TERM 3:

Warm Up – Simple Tagging/ Chasing Games

Perceptual Activities – Co-ordination and Object Manipulation Skills

Gross Motor Skills Circuit – Introduce Objects for Manipulation (balls, bats, ropes)

Cool Down – Co-operative Games (e.g. parachute play)

CONCLUSION

This programme was designed to be implemented in our school for the children with identified SEN who exhibit difficulties with gross motor control but I would hope that in the future, the programme could be extended to include all children in the school with motor difficulties. This would best be achieved by screening children at the end of their first year at school and then offering a place on the programme to all who need it. In this way, we would ensure that no child fails to reach his or her potential in the vital area of physical literacy.

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