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Running head: FUNDAMENTAL MOVEMENT SKILLS IN PRE-PRIMARY CHILDREN

Implementing a Fundamental Movement Skill program in an early childhood setting: The children's perspectives

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Abstract

Ample evidence exists about the importance of physical activity for developing and maintaining an active and healthy lifestyle. As many habits are formed when young, well planned and effective movement programs specifically designed for young children are important.

In this paper, the influence of a new teaching resource designed to support teachers in implementing a fundamental movement skill program on the children in the classes is presented using a case study approach. The case studies were constructed with teachers and children in a range of early childhood settings. The impact of the program on the children's level of confidence, knowledge of fundamental movement skills and personal physical activity level is presented. This information was gathered using direct observation methods, observation records and questionnaires. The findings indicated an increase in the children's physical activity levels, confidence and knowledge about fundamental movement skills.

Introduction

Physical activity is a well-documented and recognised component of a healthy lifestyle and childhood experiences with physical activity have an important impact on lifelong behaviour. Unfortunately, mounting evidence shows children as young as 5 years are not sufficiently active on a regular basis to develop and maintain health (Armstrong, McManus, Welsman, & Kirby, 1996; Poest, Williams, Witt, & Atwood, 1989; Sallis, Patterson, McKenzie, & Nader, 1988). Sallis and colleagues, for example, observed 33 preschool children at play for 30 minutes and found that only 11% of that time was spent in vigorous activity. Information about Australian children's physical activity levels is limited, particularly for children under 6 years. The available evidence is not encouraging. The participation rate of children in organized sport and physical activity ranges from 32% for 5-year-olds to 69% for those aged 11 years (ABS, 2000).

Physical activity guidelines recently released (Corbin & Pangrazi, 1998; NASPE, 2002) recommend that all children from birth upwards engage in developmentally appropriate physical activity. Children in preschool should accumulate at least 60 minutes of structured and between 60 and 180 minutes of unstructured physical activity every day. They should not be sedentary for more than one hour at a time (except when sleeping) and develop competence in fundamental movement skills (NASPE, 2002). Opinions vary on how this activity should be achieved however most agree it should be fun.

Two components to these guidelines are of interest to this paper, the importance of motor skill development and the need for structured activities in early childhood. Children cite

low skill level as a major barrier to participation in sport (Booth, Macaskill, McLellan, Phongsavan, Okely, Patterson, Wright, Bauman, & Baur, 1997; Ulrich, 1987) and children with low movement competence usually exhibit low physical activity levels (Bouffard, Watkinson, Thompson, Dunn, & Romanow, 1996; Butcher & Eaton, 1989). Bouffard and colleagues (1996) noted that children with low motor competence tended to be vigorously active less often, played less on large playground equipment and spent less time interacting socially with their peers. Li and Dunham (1993) found that children with high motor competence engaged in moderately vigorous activity 22.3% of lesson time, compared to children with moderate (20.3%) or low competence (17.9%). Some Western Australian research with primary school children showed those with few out of school physical activities had poorer skill competence and endurance fitness (Parker, Larkin, Anderson, Clarke, & Smith, 2000). On the other hand, children who are confident about their movement ability actively seek out movement experiences in an assured manner and develop positive expectations about their future participation in games and sports (Kalverboer, 1990). Harter (1978) formalised this in her interactive model of Effectance Motivation. This linked a child's previous attempts at task mastery to their motivation to participate in other activities within that context or domain. Consequently, children who experience difficulty acquiring the level of motor skill expected of them develop poor perceptions of their athletic competence and physical appearance (Causgrove-Dunn & Watkinson, 1994; Rose, Larkin, & Berger, 1997). This results in a lack of motivation to participate in challenging activities and a low physical activity level (Rose, Larkin, & Berger, 1998). Consequently, promoting and fostering participation in, and enjoyment of

physical activity, developing movement confidence and skill will enhance participation in physical activity when older.

Teacher centred interventions or structured activities designed to increase levels of physical activity in 5-year-old children are rarely reported, yet we know from many fields that early intervention programs have greater effectiveness than those introduced at a later stage. Children of this age are at the optimal time to develop competent movement skills because their motivation to practise is high, and playfulness, problem solving and exploration are dominant modes of learning (Branta, Haubenstricker, & Seefeldt, 1984; Haubenstricker & Seefeldt,1986). Movement skills that have not been mastered at an early age may remain unlearned due to the development of bad habits, self-consciousness or fear of injury (Gallahue, 1996). It follows, therefore, that an intervention to increase physical activity in young children, should focus on increasing movement competence, and provide numerous opportunities to practise motor skills in an enjoyable and stimulating environment. In addition, differences in play patterns can be observed and, where appropriate alternative choices presented. In general boys are more active and girls more passive in their play patterns. Stereotypical play choices are reduced when teachers monitor play choices and ensure a range of activities are selected by both girls and boys. Girls choose a greater range of activities when teachers are present, particularly in areas typically dominated by boys (Cullen, 1993).

However, outdoor play time has long been regarded by early childhood teachers as an opportunity for children to freely engage in a range of activities, many of them sedentary.

Opportunities for 'guided and self-directed play' are the key objectives (Monighan-Nourot, Scales, & Hoorn, 1987). Questions are now being raised about the effectiveness of free play to promote vigorous activity and fitness (Poest, Williams, Witt, & Atwood, 1990). Children are not choosing to be sufficiently active during free play sessions to develop FMS or confidence in their ability (Cullen, 1993). More recently, early childhood teachers are including more directed activities into the outdoor time, such as perceptual-motor programs or obstacle courses. However, a greater focus on motor skill development is now recommended.

The purpose of this paper is to present the impact of a teaching program designed to increase motor competency through movement skill teaching on the children's physical activity levels, movement skill and enjoyment of movement.

Method

Participants

During the development of the Fundamental Movement Skill Teacher Resource (Department of Education, 2001), seven teachers in five different settings were invited to trial draft versions. These teachers were based in a range of early childhood settings: preprimary, primary, special education, government and non –government. They were invited to attend a half day information session to review the draft document and plan how best to implement it.

Fundamental Movement Skill Teaching and Learning Program

The Resource provides a range of different strategies for learning, teaching and assessing fundamental movement skills (FMS) and aims to provide multiple entry points for teachers when planning programs. Over an 8-week time span, the teachers implemented a teaching program that focused on a fundamental movement skill or skills that most suited their context. The experiences of the teachers (Martin & Hands, this issue) and children were monitored by the authors over that time.

The learning and teaching strategies used by the teachers included:

Total integration. Several teachers were able to totally integrate their FMS program into the whole school day. In a preprimary, the children practiced their FMS while moving from the mat to the tables and when moving outside to play. During music sessions they practiced their FMS and also practiced their songs during FMS time. The children wrote stories and painted pictures about their activity sessions. In a primary setting the children practised the arm movement of running when moving back to their working space or playing 'Follow the Leader' while moving to other lesson areas. For English some children wrote a list of what a fast runner needs to remember or talked about their strategies for performing a skill. They drew themselves jumping and did paintings and clay models of a proficient thrower. Some children made up a song about their FMS and a dance about their learning in science. The opportunities were endless!

Self-observations. Children were encouraged to look at their running styles by observing their own reflections when practising in front of a large window. Another teacher asked the children to reflect on their learning in oral discussions with the whole group, in paired discussions and in writing.

Peer teaching. Peer teachers focused on their partners' running style while observing from the front, the side and behind, and then gave feedback.

Group discussion. It was important that the children appreciated why they needed to practise FMS. One teacher noted that many children do not see active adults in their home lives and therefore do not see a reason for practising ways of running fast or throwing a long way. The teachers talked with the children about their focus FMS and

asked why people needed to jump, run or throw well. The children observed that 'jumping gives you big strong legs' and 'a good thrower can throw hard and accurate.'

Guided discovery. A teacher experimented with guided discovery techniques such as running with stiff arms and legs, with flying arms and with folded arms and asking 'Does this help you fun fast?'

Imagery. When preparing to run the teacher 'greased' each child's elbows to make sure that they stayed bent. To warm up the arms the children pretended to swim using different techniques.

Movement stories. One teacher adapted the story format used for telling stories in language to tell the story of throwing.

> *At the beginning we get into a ready position facing the side with our other arm pointing to the target and holding the ball. In the middle we step forward with the opposite foot and bring the ball down and up. At the end we bend our elbow, throw the ball, bring our throwing foot forward and follow through with our shoulders and arms. The short story goes 'Ready position, step with opposite foot, arms down and up, bend and throw'.*

Music. Music is a wonderful way to stimulate learning. The teachers found songs such as 'The Ants Go Marching One By One' helped children practise the high knee lift important for running, and 'Johnny Works With One Hammer' facilitated the arm movement. A music and movement session moving to Chopin's 'Polonnaise' inside prior to the outside activity session gave the children a sense of running quickly as the music has a very fast beat.

Visual Cues. These can remind the children on the correct movement patterns. For example, children can stand on funny feet cards when throwing, helping them to stand in the correct position. One teacher used emu, kangaroo and dog feet.

Results

The teachers gathered information about the children's learning through a variety of methods such as observational records, photographs and work samples. The depth of information provided varied from case to case as did the degree to which the program was implemented (Martin & Hands, this issue). Those teachers who totally integrated the program into the school day reported significantly more improvement in cognitive, psychomotor and affective outcomes for the children. In addition, teacher comments were recorded during their interviews and some are reported in Table 1.

Before and after the trial each teacher was asked to complete a self-reflection sheet. One question asked them to select three children in their class that they considered had different FMS levels of achievement and to rate them before and after across a range of attributes. Every teacher reported noticeable differences in the children's skill levels, self confidence and class participation and in most cases a flow over effect into the children's general level of physical activity in the free play time. Specific comments related to increased enjoyment and involvement in the school athletic carnival, use of a wider repertoire of playground games, improved social interactions, particularly in the playground, and a greater enjoyment of movement in general.

In one preprimary the children answered some simple questions about their attitude towards physical activity and their perceived motor competence. With the support of the teacher, the children selected a happy, neutral or sad face to indicate their response to simple questions such as *When it is time for outdoor play, I am…* and *When we run, I*

am… Most children (94%) were positive towards outdoor play-time and playing games, felt they were good at throwing, catching, running and jumping, and felt happy about running. Interestingly, few of the children enjoyed feeling hot and sweaty or the sensation of their heart beating fast.

Discussion

The results reported here strongly suggest that a well-planned and implemented fundamental movement skill program in early childhood education settings has an impact on children's motor skills, physical activity levels and attitude towards physical activity. The skill programs included a range of teaching and learning strategies that varied according to the age, interests, strengths and needs of the children and the school context however the outcomes were similar. It is important to note that the teachers implemented a balanced program that included both prescribed activities and ample time for free play. This balance is important to encourage both appropriate skill development and the children's initiative and spontaneity.

In all settings, the children's performances of the targeted FMS skills improved. Each teacher felt that the improvement would not have been present without their specific and explicit teaching of the key elements important for the proficient performance of each skill. Simply practicing the skill without concern for the proficient form or correct technique does not enhance skill learning (Ashy, Lee, & Landin, 1988). In some cases it may lead to the development and practice of inefficient movement patterns as young

children generally do not distinguish between 'good at' and 'enjoying' (Cullen, 1993). Scaffolding children's learning through teacher help and guidance requires an interactive style of teaching, with teachers supporting children's skill development at the point of need, rather than teaching the same point to the whole group.

Other factors that contribute to children's learning should not be overlooked when interpreting these results. These include the enthusiasm and commitment of the teacher, the variety of teaching strategies included into the school day, the involvement of the children in the planning process, the design and attractiveness of the outdoor play area, and the time spent outdoors. For example, Sallis and colleagues (Sallis, Prochaska, & Taylor, 2000) report a 0.74 correlation between the time spent outdoors and young children's physical activity levels. Differences in many of these factors were evident to the researchers when moving between settings.

Conclusion

By providing sufficient developmentally appropriate experiences to learn and practise movement skills, teachers can optimise children's ability to participate in games, sports and other activities when older. Shephard and Godin (1986) found that children who had positive and enjoyable experiences when young were more likely to continue exercise into adulthood. It is important, therefore, that children enjoy their first formal movement experiences. These findings, therefore, have implications for pre and in-service education of early childhood and primary teachers. Teachers need to develop skills in movement

observation (Gallahue, 1996) as well as a repertoire of appropriate movement based learning experiences.

As this paper is based on anecdotal teacher reports, further empirical research is required to clarify the extent to which such movement programs impact on children's skill and physical activity levels.

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Table 1.
Teacher comments for each case story

Case Story	Improvement of FMS levels	Physical activity level	Attitude towards PA
Beth	After a few lessons, some of the children could perform one or more new skill criteria. It really made a difference when the class teacher worked on the skills too	The children needed a time to choose their own level of participation in the playground.	Most were more confident and motivated to do the skill.
Sally	The children's skills improved dramatically in just a few weeks.	The children spent much more time running and playing chasing games.	My children did really well on sports day. Every time we ran a race they said 'Let's run again!'
Fiona and Jo	After specific teaching the children showed improvements in running technique and speed.	As the children's skills improved they became more physically active.	The children became more confident in their movements. Most had renewed focus and determination. The children were most positive about the introduction of the daily activity program.
Janet	I was particularly aware of the improvement in the skill levels of the fourteen children I had identified as 'at-risk'.	The independent learning environment helped their skill development because they were able to become more active and interactive with their peers.	The extra time on skill activities increased the children' enthusiasm and the attitude of the whole class improved tremendously. Another of the more reluctant children came to tell me 'I have not been well. I made myself come to school because I just love sport!'
Paul	I noticed a marked improvement in the skills during the games compared to when I first introduced the skills		All of the children improved in their self-confidence, understanding of the game and social interaction. .
Gordon	I noticed a great improvement in the children's jumping.		