

Intellectual Output



Self-Improvement
Educational Package

SIEP

CONTENTS

INTRODUCTION

Chapter 1: PROGRAMME PLANNING

- 1.1 Planning kinetic activity program
- 1.2 The necessity of kinetic activity programs during the early years
- 1.3 Designing a weekly written plan
- 1.4 Contents of a weekly written plan
- 1.5 Practical instructions for preparing a program and weekly written plan

Chapter 2: ACCESS TO PHYSICAL ACTIVITIES

- 2.1 Physical activity in preschool settings
- 2.2 Factors of the preschool environment that affect the level of physical activity
- 2.3 Outdoor play environment
- 2.4 Quality physical activity program
- 2.5 Recommendations and practical strategies

Chapter 3.: FREQUENCY OF GROSS MOTOR ACTIVITIES

- 3.1 Level of physical activity during the early years
- 3.2 Importance of physical activity during the early years
- 3.3 Frequency and duration of physical activity during early years
- 3.4 The content of structured gross motor activities
- 3.5 Recommendations and practical strategies

Chapter 4.: TEACHER ENGAGEMENT

- 4.1 Introduction
- 4.2 Characteristics of teacher engagement
- 4.3 Practical strategies, guidelines and examples
- 4.4 Conclusion

Chapter 5: STUDENT SUPERVISION

- 5.1 Contribution of child's supervision to child's learning
- 5.2 Recommendations and practical strategies for child's supervision

Chapter 6: ENCOURAGING CHILDREN'S KINETIC ACTIVITIES

- 6.1 The contribution of physical activity in preschool education
- 6.2 Children's sensitization towards a naturally active way of living
- 6.3 Children's positive experiences from their participation in kinetic activities
- 6.4 Instructions for encouraging children toward a naturally active way of living

Chapter 7: EVALUATION OF CHILDREN'S KINETIC ACTIVITY

- 7.1 Evaluation
- 7.2 Evaluation in education
- 7.3 Evaluation in preschool education
- 7.4 Children's evaluation
- 7.5 Evaluation methods: observation and portfolio
- 7.6 Instructions for observing kinetic activities

Chapter 8: PARENT BRIEFING

- 8.1 Communicating with the family
- 8.2 Parent's contribution on the child's activity level
- 8.3 Parent briefing for the child's physical activity profile
- 8.4 Recommendations and practical strategies

INTRODUCTION

SIA-ProD Project: Self-Improvement Educational Package (SIEP)

- Project description
- Theoretical framework description
- Chapters' content description

INTRODUCTION

A number of publications indicate that childhood obesity and its relationship with physical inactivity have made physical activity (PA) promotion, a major public health priority (Erwin, Beighle, Carson, & Castelli, 2013; Pate et al., 2016; Ross, 2013). Scholars and professional organizations suggest that children in all educational levels should be provided with quality PA and Physical Education (PE) to be active throughout the school day (DGEC, 2008; NASPE, 2008; Pate et al., 2016; Pfeiffer et al., 2013; WHO, 2010).

Schools are ideal places to influence all age children's health through enhanced PA involvement, since school is the place where children spend the greatest part of their time outside home (Castelli, Centeio, & Nicksic, 2013; Kirk, 2005; Stodden & Goodway, 2007). In this context, PE and PA in the early years appear to be crucial since they offer opportunities to children in order to become physically active from a very young age. PE and PA in the early years, have also the potential to contribute to the development of children's fundamental motor skills, to support the development of their social, cognitive and affective skills and to develop lifetime PA patterns (Clark, 2005, 2007; Goodway & Robinson, 2006; Goodway, Ruri, & Bakhtiar, 2014; Pate et al., 2013; Ross, 2013).

The literature proposed that preschool-aged children should accumulate at least 60 minutes of physical activity per day. One half of that time in structured physical activity and the remaining in unstructured free-play setting (DGEC, 2008; NASPE, 2008; Pate et al., 2013). However, according to research findings, preschoolers are characterized by low levels of physical activity and high levels of sedentary behavior (Goodway et al., 2014; Pate et al., 2013; Pate et al., 2016; Pfeiffer et al., 2013; Ross, 2013).

Regardless of the strong justification for PE and PA in the school curriculum, the quality of PE and PA in the early years has been criticized worldwide as not serving their intended goals. The literature indicates that PE and PA in the early years are of poor quality, the early-year educators' teaching behaviors are not always effective and children PA levels are low (Kirk, 2005; Marsden & Weston, 2007; Ross, 2013; Stork & Sanders, 2008). Some studies have shown that positive effects were achieved through teacher professional development programs which focused on upgrading the pedagogical skills and knowledge of teachers (Castelli et al., 2013; Ross, 2013;

Stodden, & Goodway, 2007). Such programs provide opportunities for teachers to learn new pedagogical perspectives as well as new content-specific strategies in order to offer more meaningful learning experiences to their children (Goodway et al., 2014; Pate et al., 2016). Results from such studies indicated that young children's PA can be increased when schools implement instructional and organizational practices that promote PA (Pate et al., 2016; Vidoni & Ignico, 2011; Vidoni, Lorenz, & Terson de Paleville, 2014).

The “Innovative Self-Improvement Approach for the Professional Development of early educators” (SIA-ProD) project has been funded with support from the European Commission [Project number: 2016-1-EL01-KA201-023420]. The SIA-ProD program uses an alternative approach for the training and professional development of early educators and provides the methodology and instruments for self-evaluation and self-improvement. The project developed a self-assessment tool and a self-improvement educational package (SIEP) to investigate and in turn to support the way early childhood teachers promote PA in their schools.

The Self-Improvement Educational Package (SIEP): A framework of Effective Instruction in PA in Early Childhood Education

The SIEP aims to provide knowledge, ideas and supportive materials for specific dimensions of teaching effectively PA in early childhood education. In understanding what aspects enhance children learning and positive experiences towards PE and PA, scholars have investigated numerous variables and instructional practices over the years. A close examination of this line of research suggested that today we have sufficient evidence to support which factors are more effective in teaching PA (Castelli et al., 2013; Rink, 2013; Ross, 2013). Results from our pilot study and from our experts' panel study confirmed findings from the literature about specific dimensions which are more effective in teaching PA to young children. Based on these findings, we developed a framework which can record effective instruction in PE and PA in early childhood education. This framework includes two major domains with eight factors contributing to teaching quality PE and PA at early years. The first domain which is the *instructional domain*, relates to instructional practices and the second domain which is the *supportive domain*, relates to supportive practices. The instructional domain includes child evaluation, child encouragement, child supervision,

and programme planning. The supportive domain comprises teacher engagement, parent briefing, child access to physical activities, and frequency of physical activities. A brief description of each of the practices follows.

Instructional Domain: Teaching Practices

Evaluation: Child evaluation is an essential teaching practice which can help teachers create meaningful and relevant learning activities for children (Ni Chroinin & Cosgrave 2013; Schiemer, 2000). Child evaluation includes gathering data on children and making judgments about the results (Siedentop & Tannehill, 2000). Hastie and Martin (2006) emphasized that at the end of a teaching situation, the teacher needs to ask not only what the children have learned, but to also provide documentation on how well the children have learned the new knowledge. Scholars suggest that child portfolios are more comprehensive tools for evaluating children learning. Portfolios are collections of children's work and can be used to document children's understanding of content, effort, progress and achievement toward a specific goal (Rink, 2010; Siedentop & Tannehill, 2000). The results of this type of evaluation provide a more realistic picture of what children know and can perform over time. As Melograno (1998) indicated, portfolio evaluation "offers a dynamic, visual presentation of a child's abilities, strengths, and areas of needed improvement over time" (p. 15).

Encouragement: Child encouragement is an instructional strategy which can enhance child learning (Rink, 2010). The manifestation of child encouragement as an instructional practice in PE and PA settings is essential for motivating and enhancing children's learning and positive attitudes towards PE and PA. Early childhood education plays an important role in the socialization process that leads to a physically active life since it provides physical activities to a large number of children (Ross, 2013). Research indicates that when children are encouraged to actively participate in a plethora of physical activities they are more likely to become involved in PA later as adults (Tannehill, van der Mars, & MacPhail, 2015). Moreover, research findings indicate that this instructional strategy affects children's self-experiences and attitudes towards PA. Accordingly, supporting children's efforts through encouragement and positive reinforcement is a necessity in enhancing children's involvement in PA (Liukkonen, 2010; Rink, 2010; Ross, 2013).

Supervision: Child supervision and monitoring is recognized as another significant teaching practice for effective instruction in PE and PA settings (Siedentop & Tannehill, 2000). Active supervision includes three key elements (a) moving around when children practice, (b) giving them appropriate feedback and (c) modifying tasks to make them individually interesting and challenging (Hastie & Martin, 2006). Children's work can be better observed and monitored when teachers are moving around. The literature suggests that effective observation involves quick judgments about children's performance and provide the necessary cues or information to correct any errors. Teachers who always move around when children practice, can better enhance child learning through checking, assessing and correcting child performance (Tannehill et al., 2015). Research also indicates that providing children with feedback is an important teaching practice. Teacher feedback is very useful to learning because it provides to children with helpful information related to future performance (Hastie & Martin, 2006). Another essential key element of instruction is the teacher's ability to modify tasks to make them individually interesting and challenging (Rink, 2010). The literature indicates that child learning is enhanced when the instructional tasks are modified according to the skill level of the children (Siedentop & Tannehill, 2000). While observing children performance, a teacher may occasionally realize that the instructional task needs to be changed or adjusted so children can succeed more or work at a more appropriate level. Thus, observing children work and adjusting tasks to children ability level is another key strategy in enhancing child learning and in providing positive attitudes towards PE and PA (Hastie & Martin, 2006; Rink, 2010).

Planning: Planning is an essential component of effective instruction and confirms that a successive and progressive program is applied (Hastie & Martin, 2006; Tannehill et al., 2015). A major consideration when the program is planned for any educational level is to take into account the different needs of children (Siedentop & Tannehill, 2000). Planning includes the organization of the content, selection and sequence of the learning activities, children grouping, classroom management, grading children work, as well as consideration of child motivation, emotional well-being, and social interaction (Rink, 2010; Tsangaridou, 2010). The quality of children's learning may be affected if the teacher is not sufficiently prepared to make plans in advance, to research and to organize the teaching materials in a progressive manner (Rink, 2010).

Quality PE and PA are a well-intentioned goal for all children, and planning is a critical part of quality instruction (Rink, 2013; Siedentop & Tannehill, 2000).

Supportive Domain: Supportive Practices

Teacher engagement: Evidence in the literature indicates that a supportive environment is important as a basis of PA particularly in children (Tannehill et al., 2015). Teacher engagement in PA with children plays a key role in enhancing their PA levels. The teacher is a role model for children. Therefore, the teacher should be the leader in participating regularly in PA with children. In addition, the teacher is the person who organizes and coordinates indoors and outdoors, structured and unstructured activities (Castelli & Beighle, 2007; Ross, 2013). The task of the teacher is to encourage and motivate children to actively participate in PA. The teacher should carefully plan and direct PA and should strive to maximize PA opportunities for all children. The role of the teacher is considered a major determinant of whether a child is engaged in PA or not (Goodway et al., 2014; Pate et al., 2016). Teacher involvement in a child's PA has a direct impact in his/hers PA levels during childhood and in the future as an adult (Pate et al., 2013). The literature suggests that teacher engagement is an effective strategy for increasing young children's PA. The success of a PA program depends on the characteristics, motivation and engagement of the teacher in the school (Castelli et al., 2013). Teacher-planned and teacher-led activity during both indoors and outdoors sessions is a key factor in enhancing children's PA pattern (Tannehill et al., 2015). Finally, evidence indicates that when teachers are physically active and physically fit they have more chances to lead by example and be a positive influence for the children (Castelli & Beighle, 2007; Ross, 2013).

Parent briefing: Parent debriefing is a key approach in increasing children's PA patterns. Evidence indicated that is important for children to be active at school and especially in PE classes but it is also important to be active after school as well (Erwin et al., 2013). Scholars emphasize that teachers should teach children fundamental motor skills that can be carried over into their home lives or lifelong skills (Cools, De Martelaer, Samaey, & Andries, 2011; Goodway & Robinson, 2006; Goodway et al., 2014). Research demonstrates that participation in PA is affected by significant others such as parents, teachers, peers, friends and school personnel (Castelli et al., 2013; Pate et al., 2013). Children are more likely to participate in PA if their

parents and teachers are supportive. Evidence indicates that parents' actions have an influence on children's participation in PA. In a recent meta-analysis, findings indicated that parental behaviors such as modeling and support were a significant factor in children's PA (Yao & Rhodes, 2015). Since parents decide which activities their children can do and which resources they can access, they most often affect their children's PA by being a role model or by verbal motivation (Cools et al., 2011).

Evidence indicates that parent debriefing is an effective strategy in enhancing children's PA behaviors. Discussing and informing parents about PA programs that are available in the school as well as discussing regularly their children's physical involvement in such activities can be beneficial in enhancing children's PA levels (Beets, Cardinal, & Alderman, 2010; Erwin et al., 2013). Parents can encourage and motivate their children and provide access to PA in free time, such as enrolling them in extra curriculum activities. Evidence indicates that there is a positive relation between parental support and PA for children, since a greater parental support can constitute a higher PA level for the child (Lim & Biddle, 2012). In addition, research indicates that there is a relationship between parental PA, encouragement, participation, interaction, support, and children's PA levels. Further and perhaps most importantly, teachers can use parent debriefing in order to pinpoint the importance of parental support and ensure that young children are provided with the PA they need to be healthy and happy (Yao & Rhodes, 2015).

Child access to physical activities: Children participation in PA depends on the access that they have in physical activities and their motor skill competency. These features appear to affect children's PA patterns. The literature suggests that one of the keystones of physically active lifestyle is the motor skill competency (Clark, 2005, 2007; Goodway & Robinson, 2006). The development of fundamental motor skills in the early years is critical for children participation in PA, especially since prior findings are documenting a positive relationship between fundamental motor skills and PA (Clark, 2007; Ross, 2013; Stodden & Goodway, 2007). As a result, experts emphasize that schools should design quality programs which will include structure and unstructured activities throughout the school day. Quality PA and PE programs consist of well-designed curricula that include playful activities and basic motor skills in an age-appropriate way (Erwin et al., 2013; Goodway et al., 2014; Ross, 2013).

Moreover, research indicates that teachers need to ensure that children are systematically provided with access to plethora of physical activities (Pate et al., 2013). It is important to note that PA in preschool level may varied by group size, physical spaces, playground equipment and materials, pathway design, surface material use of time and adult-child interactions (Nicaise, Kahan, & Sallis, 2011). There are researchers suggesting that outdoor recess may provide significant opportunities for PA for children. Different opportunities, like playground redesign, painting of court markings, fun trails and hopscotch, provision of game equipment, and teacher supervision, have been assessed in the scope of activity engagement at recess in schools. Findings from such studies indicated that such arrangements and equipment appears to foster children's PA levels (Nicaise, Kahan, & Sallis, 2011).

Frequency of physical activities: In recent years, significant attention has been paid to finding strategies to increase active behaviors in young children (Pfeiffer et al., 2013; Stork & Sanders, 2008). Recent publications from around the world have indicated that young children spend most of the day inactive (Pate et al., 2013; Reilly, 2010). In spite of the perception that children are frequently moving during preschool day, research findings support that children in this age group are not receiving the recommended amounts of PA. Studies have shown that preschoolers typically spend a substantial amount of time (70%-90% of their day) in sedentary behavior (Gordon, Tucker, Burke, & Carron, 2013; Pfeiffer et al., 2013; Reilly, 2010). Recommendations in the literature suggest that preschool-aged children should accumulate at least 60 minutes of PA per day, one half of that time in structured PA and the remaining in unstructured free-play setting (DGEC, 2008; Erwin et al., 2013). Scholars have also suggested that special attention is needed to this age group because it is believed that if children are supported to be active in early years, there is more chance that they will remain active as adults (Clark, 2007; Pate et al., 2013; Ross, 2013). Therefore, physical activities (indoors or outdoors, structured or unstructured) should occur for at least 60 minutes on a daily basis in order to increase children PA levels.

LITERATURE

- Beets, M., Cardinal, B., Alderman, B. (2010). Parental social support and the physical activity-related behaviors of youth: A review. *Health Education and Behavior*, 37(5), 621-644.
- Castelli, D., & Beighle, A. (2007). The physical education teacher as school activity director. *Journal of Physical Education Recreation & Dance*, 78(5), 25-28.
- Castelli, D., Centeio, E., & Nicksic, H. (2013). Preparing educators to promote and provide physical activity in schools. *American Journal of Lifestyle Medicine*, 7(5), 324-332.
- Clark, J. (2005). From the beginning: A developmental perspective on movement and mobility. *Quest*, 57(1), 37-45.
- Clark, J. (2007). On the problem of motor skill development. *Journal of Physical Education, Recreation & Dance*, 78(5), 39-44.
- Cools, W., De Martelaer, K., Samaey, C., Andries, C. (2011). Fundamental movement skill performance of preschool children in relation to family context. *Journal of Sports Sciences*, 29(7), 649-660.
- Directorate-General for Education and Culture (DGEC). (2008). *Recommended policy actions in support of health-enhancing physical activity*. Retrieved from http://ec.europa.eu/assets/eac/sport/library/policy_documents/eu-physical-activity-guidelines-2008_en.pdf.
- Erwin, H., Beighle, A., Carson, R., & Castelli, D. (2013). Comprehensive school-based physical activity promotion: A review. *Quest*, 65(4), 412-428.
- Goodway, J., & Robinson, L. (2006). SKIPing toward an active start: Promoting PA in preschoolers. *Beyond the Journal: Young Children*, 61(3), 1-6.
- Goodway, J., Ruri, F., & Bakhtiar, S. (2014). Future directions in physical education & sport: Developing fundamental motor competence in the early years is paramount to lifelong physical activity. *Asian Social Science*, 10(5), 44-54.
- Gordon, E., Tucker, P., Burke, S., & Carron, A. (2013). Effectiveness of physical activity interventions for preschoolers: A meta-analysis. *Research Quarterly for Exercise and Sport*, 84(3), 287-294.
- Hastie, P., & Martin E. (2006). *Teaching elementary physical education: Strategies for the classroom teachers*. San Francisco, CA: Pearson Education.
- Kirk, D. (2005). Physical education, youth sport and lifelong participation: The importance of early learning experiences. *European Physical Education Review*, 11(3), 239-255.
- Lim, L., & Biddle, S. (2012). Longitudinal and prospective studies of parental correlates of physical activity in young people: A systematic review. *International Journal of Sport and Exercise Psychology*, 10(3), 211-220.
- Liukkonen, J. (2010). Promoting children's sound personality development and intrinsic motivation towards physical activity. In E., Zachopoulou, J., Liukkonen, I., Pickup, & N., Tsangaridou (Eds.), *Early Steps Physical Education Curriculum: Theory and practice for children under 8* (pp.31-40). Champaign, IL: Human Kinetics.

- Marsden, E., & Weston, C. (2007). Locating quality physical education in early years pedagogy. *Sport, Education and Society* 12(4), 383–398.
- Melograno, V. (1998). *Professional and student portfolios for physical education*. Champaign, IL: Human Kinetics.
- National Association for Sport and Physical Education (2008) (NASPE). *Comprehensive school physical activity programs* [position statement]. Reston, VA: Author.
- Nicaise, V., Kahan, D., & Sallis, J. (2011). Correlates of moderate-to-vigorous physical activity among preschoolers during unstructured outdoor play periods. *Preventing Medicine*, 53(4-5), 309-315.
- Ni' Chroinin, D., & Cosgrave, C. (2013). Implementing formative assessment in primary physical education: teacher perspectives and experiences. *Physical Education and Sport Pedagogy*, 18(2), 219 –233.
- Pate, R., Brown, W., Pfeiffer, K., Howie, E., Saunders, R., Addy, C., & Dowda, M. (2016). An intervention to increase physical activity in children: A randomized controlled trial with 4-year olds in preschools. *American Journal of Preventing Medicine*, 51(1), 12-22.
- Pate, R., O'Neill, J., Brown, W., McIver, K., Howie, E., & Dowda, M. (2013). Top 10 research questions related to physical activity in preschool children. *Research Quarterly for Exercise and Sport*, 84(4), 448-455.
- Pfeiffer, K., Saunders, R., Brown, W., Dowda, M., Addy, C., & Pate, R. (2013). Study of health and activity in preschool environments (SHAPES): Study protocol for a randomized trial evaluating a multi-component physical activity intervention in preschool children. *BMC Public Health*, 13(728), 1-8.
- Reilly, J. (2010). Low levels of objectively measured physical activity in preschoolers in childcare. *Medicine & Science in Sports & Exercise*, 42, 502-507.
- Rink, J. (2010). *Teaching physical education for learning* (6th ed). New York: McGraw-Hill.
- Rink, J. (2013). Measuring teacher effectiveness in physical education. *Research Quarterly for Exercise and Sport*, 84(4), 407–418.
- Ross, S. (2013). Pre-K physical education: Universal initiatives and teacher preparation recommendations. *Quest*, 65(1), 1-13.
- Schiemer, S. (2000). *Assessment strategies for elementary physical education*. Champaign, IL: Human Kinetics.
- Siedentop, D., & Tannehill, D. (2000). *Developing Teaching Skills in Physical Education* (4th ed.). Palo Alto, CA: Mayfield.
- Stodden, D., & Goodway, J. (2007). The dynamic association between motor skill development and physical activity. *Journal of Physical Education, Recreation and Dance*, 78(5), 33-49.
- Stork, S. & Sanders, S. (2008). Physical education in early childhood. *Elementary School Journal*, 108(3), 197-206.
- Tannehill, D., van der Mars, H., & MacPhail, A. (2015). *Building Effective Physical Education Programs*. Burlington, MA: Jones & Bartlett.

- Tsangaridou, N. (2010). Teacher behaviours. In E., Zachopoulou, J., Liukkonen, I., Pickup, & N., Tsangaridou (Eds.), *Early Steps Physical Education Curriculum: Theory and practice for children under 8* (pp.21-29). Champaign, IL: Human Kinetics.
- Vidoni, C., & Ignico, A. (2011). Promoting physical activity during early childhood. *Early Child Development and Care*, 181(9), 1261-1269.
- Vidoni, C, Lorenz, D., & Terson de Paleville, D. (2014). Incorporating a movement skill programme into preschool daily schedule. *Early Child Development and Care*, 184(8), 1211-1222.
- World Health Organization (WHO) (2010). *Global recommendations on physical activity for health*. Switzerland: WHO Press.
- Yao, C., & Rhodes (2015) Parental correlates in child and adolescent physical activity: a meta-analysis. *International Journal of Behavior Nutrition and Physical Activity*, 12(10), 1-38.

CHAPTER

1

PROGRAM PLANNING

CHAPTER OUTLINE

- Designing kinetic activity programs
- The necessity of kinetic activity programs during the early years
- Designing a weekly written plan
- Contents of a weekly kinetic activity program
- Practical instructions for preparing a program and written plan

1.1 PLANNING KINETIC ACTIVITY PROGRAMS

A kinetic program is an organized procedure that gives meaning, space for action, sequence and balance to the targets and purposes of a lesson, in a way that it reflects the values and aspirations of the teachers who are responsible for its application (Gallahue, 1996). The program is a link between teacher knowledge on a subject and their ability to teach it effectively. This link connects the content of the program with children's expectations and needs (Capel, 1997).

A school kinetic activity program is a part of the school program. It incorporates a series of kinetic experiences which help children acquire skills and develop their physical condition along with their cognitive and emotional development (Gallahue, 2002). In addition, a kinetic activity program, correctly planned and adjusted to children's developmental level can contribute significantly to the overall education of a child. The interest of such programs focuses on the child per se and not the activity. Programs form the basic structure for the design of weekly or daily plans concerning kinetic activities, which are performed at school indoors or outdoors (Gallahue, 1996).

According to the American Heart Association (2010), the physical activity time in early childhood has to be around 45 minutes per day. Nevertheless, the usual lack of available space and time often threatens a kinetic program's successful execution and thus, such programs have to be carefully designed and implemented (Pangrazi, 1999).

1.2 THE NECESSITY OF KINETIC ACTIVITY PROGRAMS DURING THE EARLY YEARS

Early childhood is considered ideal for teachers to help children develop the maximum of their competences. It is important for teachers to have in mind that learning is a continuous process in early childhood. They learn from their family, their friends, and the experiences offered by their environment. Children of this age spend a big part of their daily time learning. A proper cognitive environment does not simply consist of the natural environment, but also of the way children feel about and respond to this environment (Zahopoulou & Kouli, 2017).

Begley (1997) supported that "rich environments produce rich brains" and that a basic factor of this procedure is movement. Besides, there are many brain areas which are activated during a movement –a lot more than those which are activated when a person sits (Newell, 1986). In fact, when a person stands still for more than 10 minutes there is

“a decrease of his/her perception of kinetic stimuli and an increase of his/her fatigue” (Lee, 2007).

It is important for preschool aged children to be given a wide range of opportunities to get involved in kinetic activities, as movement and the use of body have many different meanings and roles for a young child (Gallahue & Donnelly, 2003). For a young child, moving means discovering his/her environment, accepting and being accepted, enjoying life and freedom and also communicating. Young children’s intense desire to participate in kinetic activities declares that they spontaneously prepare their brains to learn. In fact, children are taught how to learn through their body and by moving. Ratey (2008) expressed the opinion that moving and exercising “creates an environment, in which the brain is ready, eager and able to learn.” Exercising stimulates the release of dopamine –a neuro-transmitter– to the brain, which positively influences the ability to learn.

1.3 DESIGNING A WEEKLY WRITTEN PLAN (including individualized activities)

A written weekly plan

A complete program requires a long-term, middle-term and short-term design (DES, 1985a, b). Therefore, the program may concern: (1) the school year, *annual programming*, (2) individual units which can be divided into semesters, trimesters or months, *unit programming* and (3) the *weekly or daily plan* of kinetic skills, depending on teachers’ targets and programming (Avgerinos, Papacharisis, Goudas & Kioumourtzoglou, 2002).

In a written *annual programming* teacher:

- Defines the priorities of targets, depending on the needs of the students and the class.
- Defines the subjects and the teaching units per trimester or month.
- Defines the number of activities per subject.
- Considers the parallel activities in which children participate.

In a written *unit programming*, a unit can be defined by:

- kinetic activities (e.g. a football unit)
- elements of physical condition, concerning health (e.g. a strength unit)
- cognitive elements (e.g. a unit on critical thinking) or

- social elements (e.g. cooperation)

In a *written weekly plan* the teacher defines:

- The pursuits of the week (main & secondary)
- The kinetic activities of each day
- The points of emphasis and instructions (depending on the style and teaching methods)
- The procedures of organizing and motivating children
- The material, the place and time of the kinetic activities
- The evaluation of kinetic activities through observation, during or at the end of the week or the unit

The benefits of a *written weekly plan* derive from the fact that:

- It is a direct reminder of WHAT and HOW a teacher should teach
- It is a criterion for possible improvements of the following weekly plans
- It is a criterion for the improvement of the units and contents of the more general programming
- It is a source of evaluation and improvement of the teacher per se

According to Graham (1992), designing a program is an inalienable part of an effective teaching and offers teacher a safe ground to apply a successive and progressive weekly plan of kinetic activities.

Teachers must design written weekly plans, in order to ensure development, use time effectively, reduce anxiety and build trust (Graham, Hale, & Parker, 2001; Rink, 2006; Siedentop & Tannehill, 2000). However, there is difficult to design a perfect weekly plan, as it is influenced by many different parameters (Tsangaridou, 2007). These parameters are the environment of each school, teacher, as well as the different needs and characteristics of each child.

A written weekly plan with individualized activities

Teachers need to provide complete and carefully differentiated or individualized programs, given each child's unique personality and ability to learn (Pickup & Price, 2007). More specifically, teachers should try to clarify the limits that alienate or prevent certain children from participating actively in kinetic activities at school or in general.

Differentiated teaching and learning is probably the educational basis, in order to apply the principle of equity in education. Differentiated teaching is defined as the procedure during which cognitive subjects, teaching methods, as well as sources and

activities are designed in a way that responds to individual child's needs (Bearne, 1996). Tomlinson (1999), mentioned that differentiation is rather a philosophy according to which teachers accept the differences of children in a class and build the provided knowledge on them, without criminalizing any diversion from the means. A critical approach to differentiation goes even further and confronts each child as a distinct biography, which must spherically be studied and dealt with, in an effort to control all the factors –at and out of school– that influence development (Koutselini, 2006).

Differentiation is a “procedure through which different children are taught with various ways, means and processes based on prioritized criteria, which respond to the different needs of children who co-exist in mixed-ability classes” (Koutselini, 2001, p 24). Simultaneously, differentiated or individualized teaching is an educational procedure which depends on the fact that teachers must adjust their teaching on each child's unique characteristics, so as to satisfy their different levels of readiness, preferences and interests.

Differentiation among preschool aged children greatly reflects the differences deriving from their family environment and experiences acquired in it, as well as their differences in development. These individual differences are the reasons why children of the same age present such significant deviations, as it concerns the pace of their kinetic development and their cognitive and emotional readiness to be educated (Koutselini & Agathangelou, 2009). Thus, children's readiness is influenced by their family and social environment, because of the educational experiences that they have lived and still live in it. According to Koutselini (2008), children who co-exist in a class have significant differences and simultaneously, significantly differentiated needs.

Consequently, it is very important that teachers create plans with activities that can be performed by all children simultaneously, while they respect each child's individuality. The use of a written weekly plan enables individualized teaching –up to a point– and therefore fulfills each child's need to learn based on their own pace (Papadakis & Ghiglione, 2008).

1.4 CONTENTS OF A WEEKLY KINETIC ACTIVITY PROGRAM

Providing preschool aged children with adequate chances to participate in kinetic activities is of paramount significance, considering the fact that children of this age use

their body and movements in many different ways. According to Zahopoulou and Kouli (2017), the general aims of physical activity at preschool age are:

1. Provision of kinetic experiences aiming at discovering and experimenting.
2. Design of activities which develop the elements of movement (knowledge of the body and space, quality of movement) and the basic kinetic skills (moving and handling).
3. Improvement of self-confidence, through participating in developmentally suitable programs of kinetic activities.
4. Activation of fantasy, through playing and acting.
5. Reinforcement of mental skills, through participating in problem solving activities.
6. Facilitation of the cultivation of oral speech, through the use of terminology relative to movement.
7. Development of social skills, through activities aiming at fortifying positive interpersonal relationships.

Teachers should not ignore kinetic activities, in their effort to construct a qualitative and balanced program, if they want to reinforce all aspects of child development. Kinetic activities apart to children's kinetic development, contribute to their social, emotional and mental development as well. For example, through kinetic games children can learn to interact positively, learn the meaning of independence, and experience the emotion of being member of a team. The self-image of a child can be enhanced, as child becomes kinetically more capable. In addition, child can improve their mental skills by creating movements and games and by solving problems that appear during kinetic activities.

The course of the various developmental domains is defined by four basic principles:

- Children develop skill according to their chronological age
- The development of each skill goes through certain phases
- Despite the fact that children learn and develop skills in a successive course, the pace of this course differs for each individual
- Development varies significantly -in pace and according the domain- among children depending on the individual characteristics of each child.

The above mentioned principles facilitate the identification of important differences in children's development in early years.

1.5 PRACTICAL INSTRUCTIONS FOR PREPARING A PROGRAM AND WRITTEN PLAN

According to Pangrazi (1999), kinetic activity programs are successful when teachers work in a school environment, where the following things take place:

- Teachers and parents understand the value of kinetic activities and consider them vital elements for a holistic development.
- Existence of adequate and developmentally appropriate equipment and materials.
- There is a kinetic activity program which both children and their parents know that it will be applied on a regular basis.
- There is individual evaluation for each child, concerning kinetic activities.
- The physical health of children and the learning of kinetic skills is considered as important as the learning of other cognitive skills.

The following indicative points can be used by teacher in order to develop a program or weekly kinetic activity plans.

- A program depends on the needs, interests and developmental level of each child and not just on criteria concerning age and class.
- Before designing a program or weekly plans, a teacher shall take into consideration the following information:
 - Indoor or outdoor facilities and why?
 - Equipment that can be used in kinetic activities
 - Number of children per class
 - Duration of kinetic activities per week
 - Children's developmental level
 - Usual weather conditions, depending on the season
 - Children's physical condition level
- There are steps which constitute a broad basis for the design of kinetic activity programs. Thus, a teacher shall:
 - Establish the values according to which the program will be designed
 - Develop a conceptual framework, which will depict the significant ideas that the program will depend on
 - Define the aims and determine the targets of the program

- Design a long-term program, which will concern the whole school year or shorter periods and then design a weekly kinetic activity plan
- Apply the weekly plans
- Evaluate the progress of both children and program, so as to find the weak and strong points of program implementation
- Adjust the targets of the program, as well as those of the weekly plans
- In a kinetic activity program, children have the right to:
 - Participate in all games and kinetic activities
 - Participate on a level which is in accordance with their maturity and ability
 - Be given a qualitative orientation by adults
 - Develop their creativity and critical thinking
 - Participate in decision making
 - Be active in a safe and healthy environment
 - Have equal opportunities
 - Be treated with respect and dignity
 - Enjoy their participation

LITERATURE

- American Heart Association, Inc. (2010). *Circulation*. 2010;122 [suppl 2]: S250-S275 / *Circulation*. 2010;122 [suppl 3]:S640 – S656
- Avgerinos A., Papacharisis V., Goudas M. & Kioumourtzoglou E. (2002). The role of physical education teachers in "Health Exercise" programs. *Modern Education*, 126, 130-140. [in Greek language]
- Bearne, E. (1996). *Differentiation and diversity in the primary school*. London and New York: Routledge
- Begley, S. (Spring/Summer 1997). How to build a baby's brain. *Newsweek Special Issue*.
- Capel, S. (1997). *Learning to teach physical education in the secondary school*. Routledge, London.
- DES (1985a) *Education 8-12 in Combined and Middle Schools* (HMSO, London).
- DES (1985b) *Education Observed 3* (DES, London).
- Gallahue, D.L. (1996). *Developmental Physical Education for Today's Children* (3rd edition). Brown & Benchmark Publishers.
- Gallahue, D.L. (2002). *Ανάπτυξη Φυσικής Αγωγής για τα Σημερινά Παιδιά* (Μετάφραση & Επιμέλεια της ελληνικής έκδοσης: Ευαγγελινού, Χρ., & Παππά, Α.) Θεσσαλονίκη: University Studio Press.
- Gallahue, D. Donnelly, F. (2003). *Developmental physical education for all children*. Champaign: Ill: Human Kinetics.
- Graham, G. (1992). *Teaching children physical education: Becoming a master teacher*. Champaign: IL., Human Kinetics.
- Graham, G., Hale S., & Parker, M. (2001). *Children Moving: A reflective approach to teaching physical education* (5th ed). Mayfield: CA, Mountain View.
- Koutselini, M. (2001). The development of programs at the micro level and the pedagogical autonomy of the teacher. *Pedagogical Survey*, 31/2001, 26-37. [in Greek language]

- Koutselini, M. (2006). *Differentiation of teaching-learning in mixed-ability classes: Philosophy and concept, approaches and applications*. Nicosia: Editor's Edition. [in Greek language]
- Koutselini, M. (2008). *Creation and differentiation of teaching-learning in mixed-ability classes*. Nicosia: Editor's Edition. [in Greek language]
- Koutselini, M. & Agathangelou, S. (2009). Human rights and equity in teaching, in Ross, A. (Ed.) *Human Rights and Citizenship Education* (pp. 237 - 243). London: CiCe, pp. 237 - 243.
- Lee, I. (2007). *Power Brain Kids*. Healing Society Inc.
- Pangrazi, R.P. (1999). *Διδασκαλία της Φυσικής Αγωγής στην Πρωτοβάθμια Εκπαίδευση*. (Επιμέλεια έκδοσης: Ευθύμης Κιουμουρτζόγλου). Θεσσαλονίκη: University Studio Press.
- Papadakis, S., Ghiglione E. (2008). Enhancing critical thinking by providing cognitive skillbased question wizards in LAMS activities. In L. Cameron & J. Dalziel (Ed.) *European LAMS Conference: Practical Benefits of Learning Design*, June 25th -27th , Cadiz, Spain.
- Newell, K.M. (1986). Constraints on the development of coordination. In: M.G. Wade and H.T.A. Whiting (eds.) *Motor development in children: Aspects of coordination and control*. Dordrecht: Martinus Nijhof, 341-360.
- Pickup, I., & Price, L. (2007). *Teaching Physical Education in the Primary School. A development Approach*. Continuum International Publishing Group. London – New York.
- Ratey, J. (2008). *Spark: The revolutionary new science of exercise and the brain*. New York: Little Brown and Company.
- Rink, J. (2006). *Teaching physical education for learning* (5th Edition). New York, NY: McGraw-Hill.
- Siedentop, D., & Tannehill, D. (2000). *Developing Teaching Skills in Physical Education* (4th ed.). Mayfield: CA, Mountain View
- Tomlinson, C. A. (1999). *The Differentiated Classroom. Responding to the Needs of All Learners*. USA: ASCD.
- Tsangaridou N. (2007). Planning in Physical Education: Structure of Lesson Plans. In E. Zachopoulou, N. Tsangaridou, I. Pickup, J. Liukkonen, V. Grammatikopoulos, (Eds.) *'Early Steps'. Promoting healthy lifestyle and social interaction through physical education activities during preschool years*. pp. 32-35, Thessaloniki: Xristodoulidi Publications.
- Zachopoulou, E. & Kouli, O. (2017). *Physical Education at the Beginning of the 21st Century. Aims-Goals-Purposes in Preschool Age*. Thessaloniki, Publications: Afoi Kyriakidi. [in Greek language]

CHAPTER

2

ACCESS TO PHYSICAL ACTIVITIES

CHAPTER OUTLINE

- PA in preschool settings
- Factors of the preschool environment that affect the level of PA
- Outdoor play environment
- Quality PA program
- Recommendations and practical strategies

2.1 PA IN PRESCHOOL SETTINGS

PA (PA) during early childhood is related to favorable levels of positive health outcomes such as cardiovascular disease risk factors (e.g., blood lipids, blood pressure) (Saakslanti et al., 2004), body composition (Moore et al., 2003), motor skill development (Fisher et al., 2005), and psychosocial characteristics (Timmons et al., 2007). In contrast, a sedentary lifestyle is associated with greater risk factors for chronic diseases such as diabetes mellitus and coronary heart disease (Saakslanti et al., 2004). Therefore, promotion of PA should begin already during early childhood.

Preschools are the main settings for the promotion of children's PA. In fact, all children can learn new skills and have regular opportunities to be physically active at early childhood units. Children's participation in PA depends on the access that they have and their motor skill competencies. Several researchers have noted the importance of interventions to increase PA during early childhood (Goldfield et al., 2012; Summerbell et al., 2012), and shown that early childhood units are important for children's PA, as places where physical inactivity can be addressed more effectively (Finn et al., 2002; Pfeiffer et al., 2009). Early childhood units are complex settings because children spend time in different locations (indoors and outdoors), and different contexts within those locations (group time, free play, portable or stationary equipment).

Although, there are some studies reported low levels of PA among children attending childcare, variation has been found in amount and intensity of PA among children in different units (Pagels et al., 2011; Pate et al., 2008). This variation provides reasons to believe that factors facilitating and inhibiting PA exist in early childhood units (Pate et al., 2004).

2.2 FACTORS OF THE PRESCHOOL ENVIRONMENT THAT AFFECT THE LEVEL OF PA

A preliminary step in planning PA for preschool children is to determine the factors of the preschool environment that influence the PA of children. The factors that have been associated with children's PA include program quality, environmental variables (e.g., portable equipment, larger playgrounds) (Dowda et al., 2009), and social variables (e.g., teacher arranged activities while indoors, child-initiated activities while outdoors) (Brown et al., 2009). Effective PA interventions in preschools need to account for these variations in setting characteristics, because there is evidence that the specific preschool a child attends, influences their level of PA (Timmons et al., 2007; IOM, 2011).

Two studies used observational methods to identify characteristics of preschools and the PA levels of children who attended these preschools (Dowda et al., 2004; Bower et al., 2008). The results of these studies showed that children in these centers with high quality scores, were observed to spend less time in sedentary activities compared to children in preschools with lower scores (Dowda et al., 2004). Bower et al. (2008) used the Environmental and Policy Assessment and Observation (EPAO) instrument to quantify both the social and physical environment of 22 preschools. Children in preschools with higher EPAO scores were observed to spend significantly higher percent of time in MVPA (Moderate to Vigorous PA) and lower percent of time in sedentary activity.

Another study examined policies and characteristics of preschools that may influence the time children spend in PA and sedentary behaviors, using accelerometers to measure PA during the preschool day (Dowda et al., 2009). The analysis of the data showed that children in preschools with stationary playground equipment (e.g., slides, jungle gyms) were less active than children in preschools with portable equipment. Also, children in preschools with more portable PA materials (e.g., balls, tricycles) were more active than children in preschools with less portable materials. The study of Hannon and Brown (2008) tested the PA enhancing effects of adding “activity-friendly” portable play equipment to a preschool playground. After the introduction of the portable equipment, children significantly decreased time spent in sedentary activities (57.1% to 41.2%) and significantly increased time spent in light- (30.6% to 34.1%), moderate- (9.8% to 17.6%), and vigorous-intensity (2.3% to 7.0%) PA. The results demonstrated that a simple, relatively inexpensive modification to the playground environment can increase children’s PA.

A reason for the increased sedentary behavior when stationary equipment is used may be attributed to children’s tendency to congregate on and under the equipment. Brown et al. (2006), using the observational system OSRAC-P reported that when children were observed on stationary playground equipment, only 13% of the intervals were spent in MVPA. Twice as many intervals were spent in MVPA when the children had balls and other portable PA equipment. These results indicated that preschools can increase children’s PA levels by providing balls and equipment for active games.

The use of electronic media can also affect the level of children’s PA. The study of Dowda et al. (2009) suggests that preschools that limit electronic media use can decrease the time children spend in sedentary activities and increase their PA levels.

In conclusion, research findings suggest that educators can organize the preschool environment in ways that help children spend more time in PA and less time in sedentary activities.

2.3 OUTDOOR PLAY ENVIRONMENT

Children can be encouraged to explore and play in both indoors and outdoors with access to space and equipment that is suitable and safe. Outdoor settings provide lots of opportunities for PA and researchers suggest that outdoor free play time may provide significant opportunities to increase the level of children's PA. Different opportunities, like playground redesign, painting of court markings, fun trails and hopscotch, provision of game equipment, and teacher supervision have been assessed in the scope of activity engagement during outdoor free play time in schools. Findings from such studies indicated that such arrangements and equipment appear to foster children's PA levels (Nicaise, Kahan, & Sallis, 2011).

Outdoor play areas can act as key influences on PA, for example, lower playground density (less children per square meter) and the presence of vegetation and unbroken open areas are positive influences on PA (Trost et al., 2010). Cardon et al. (2008), assessed the influence of specific playground attributes on PA behavior during free play. The findings suggested that child care facilities could increase PA during outdoor free play time by adopting policies that reduce overcrowding in specific playground areas. In both genders, higher step counts per minute were significantly associated with less children per m² and with shorter recess times. Only in boys a hard playground surface was a borderline significant predictor for higher PA levels. In girls, higher step counts were associated with the presence of less supervising teachers. Playground markings, access to toys, the number of playing or aiming equipment pieces and the presence of vegetation or height differences were not significant PA predictors in both genders.

Other researchers found similar findings and they supported that outdoor area size is an important characteristic of preschools that affect the level of children's PA (Louie et. al, 2003; Boldermann et. al., 2006). They recommended that playgrounds should have a minimum of 75 square feet (6,9 square meters) of outdoor play area for each child. Preschools with smaller playgrounds may need to schedule playtime so that fewer children are on the playground at the same time. Boldemann et al. (2006), assessed the influence of the outdoor environment on young children's PA level studying the following outdoor attributes: (a) total outdoor area, (b) trees and shrubbery and open ground and (c) integration of play areas with vegetation. Children attending centers with 'high' outdoor environment scores, indicating a greater presence of trees, shrubbery, and open play areas, exhibited significantly higher step counts than children attending centers with 'low' outdoor environment scores.

2.4 QUALITY PHYSICAL ACTIVITY PROGRAMME

The National Association for Sport and Physical Education (2002) recommends that preschoolers have to accumulate at least 60 minutes of structured and 60 minutes of unstructured PA daily. Time spent in preschool may be one place for young children to obtain a significant portion of their daily PA (America's Children in Brief, 2008). Experts emphasize that preschools should design quality programs which will include structure and unstructured activities throughout the school day and that children 3 to 5 years of age shall participate in both free play and structured PA.

Structured PA are planned and intentionally directed by an informed adult and are designed for the specific children's developmental level. These activities contribute to children's basic motor development. Structured activities can be either indoor or outdoor activities. On the other hand, unstructured PA is not directed by an adult and is often called 'free time' or 'self-initiated play.' These activities occur as children explore their environment and give them opportunities to make up games, rules, and play with others. While unstructured activity allows time for creativity, self-expression, cooperation, structured activity encourages socialization, development of gross motor skills and object control skills, and improves self-confidence.

For pre-school children, PA mainly comprises unstructured, active play and learning locomotor, stability and object-control skills. It is important that they have the opportunity to practice these skills in various settings and that they receive encouragement, regular feedback and support from adults. Active play will normally include activities that involves moving the trunk and more exertion than the minimal movement required to carry out simple everyday tasks such as washing, bathing and dressing, or activities such as playing board games or passive play (for example, craft activities, drawing, dressing up or playing at a sand table).

Both structured and unstructured PA shall occur daily. Although, unstructured activities are not directed by an adult, they shall still be supervised by an adult. Adults might contribute some structure or formality or facilitate play by providing stimuli in the environment within which young children play more constructively and generate their own physically active games and play (for example, a designated play area with a range of equipment and challenges) (Department of Health, PA, Health Improvement and Protection, 2011).

PA can incorporate a wide range of complex skills. Preschoolers can hop on one foot, stand on one foot for a few seconds, skip (or almost skip), do a somersault, use child-sized utensils when eating, swing, climb up and down structures, brush their teeth, and use the toilet independently or with some adult assistance. Many of the activities that preschoolers master

require not only their gross motor skills using their large muscles, like hopping on one foot, but also use those newly-honed fine motor skills, like brushing their teeth, as well. Because of this, it is important for educators to incorporate activities that encourage the use of both motor groups.

Research indicates that early childhood educators need to ensure that children are systematically provided with access to plethora of PA (Pate et al., 2013). Even at the preschools, where teachers and preschool directors are concerned with delivering appropriate levels of academic content, an integrated PA program could incorporate PA into pre-academic lessons to support children's learning. During the "Move to Learn" integrated PA program (Pfeiffer et al., 2013), educators were encouraged to be creative of how they integrate PA into daily schedules. Examples were singing the alphabet while being physically active, acting out stories, or counting with large muscle motor movements.

Trost et al. (2008) studied an 8-week 'Move and Learn' program focused on increasing PA throughout the preschool curriculum included activities in math, science, language arts and nutrition education. Teachers were trained to integrate movement experiences ('move and learn' activities) into daily circle or group time, a classroom learning context in which children are typically expected to remain seated and relatively sedentary. The results showed that children in the 'Move & Learn' classrooms, which integrated PA into existing curriculum, exhibited significantly higher levels of classroom MVPA than children completing their usual curriculum.

The National Association for the Education of Young Children proposes to organize activities around learning domains that involve PA, identifies these domains as physical, social and emotional, and cognitive (Coople & Bredekamp, 2009). The structured and unstructured activities for the physical domain use gross and fine motor skills, like kicking a ball forward, dancing to music, throwing balls overhead, walking up and down stairs with alternating feet, jumping up and down repeatedly, etc. PA can also serve as an instrument for teaching social and emotional skills, for example through role-playing. Social and emotional development is focused on learning about feelings, appropriate expression of emotions, empathy, and developing and maintaining relationships. Additionally, PA can be used to teach cognitive learning. Cognitive learning expands children's intellectual capacity and mental abilities. When educators teach numbers, colors, shapes, senses, and vocabulary they are teaching cognitive skills.

2.5 RECOMMENDATIONS AND PRACTICAL STRATEGIES

This section provides some recommendations and practical strategies for early childhood educators in order to lead young children to have access to PA during unstructured and structured phases of the program.

- Be aware of the importance of meeting the daily recommendations for PA.
- Facilitate movement skills every day by including physically active indoor and outdoor activities as part of the curriculum.
- Build time in your schedule to include daily planned structured PA that supports age-appropriate motor skill development (jumping, skipping, hopping, etc.). The activity should be engaging, fun, and involve all children with minimal or no waiting.
- Plan various fun PA that are vigorous (get children “breathless” or breathing deeper and faster than during typical activities) for short bouts of time (riding tricycles, dancing to music, navigating an obstacle course, playing tag, etc.).
- Play games that incorporate music, imitation and simple directions such as animal movements, follow the leader or dancing with scarves.
- Develop movement stations indoors or outdoors so children can practice developing skills: throwing, catching, kicking, balancing, changing direction, jumping, hopping, skipping, galloping, etc.
- Plan safe, engaging activities outdoors.
- Provide activities to encourage balance: standing on one foot or walking a balance beam line on the floor, or on different textured or uneven surfaces.
- Encourage children to work together to create their own games.
- Be good role models and be active themselves.
- Communicate with families about PA and share examples of structured and unstructured physical activities

LITERATURE

America's Children in Brief: Key National Indicators of Well-being (2008). *Federal Interagency Forum on Child and Family Statistics*. Washington, DC: U.S. Government Printing Office.

Bower, JK., Hales, DP., Tate, DF., Rubin, DA., Benjamin, SE. & Ward, DS. (2008). The childcare environment and children's PA. *American Journal of Preventive Medicine*, 34 (1), 23–29.

- Brown, WH., Pfeiffer, KA., McIver, KL., Dowda, M., Almeida, J. & Pate, RR. (2006). Assessing Preschool Children's PA: The Observational System for Recording PA in Children-Preschool Version, *Research Quarterly for Exercise and Sport*, 77 (2), 167-176.
- Brown, WH., Pfeiffer, KA., McIver, KL., Dowda, M., Addy, CL. & Pate, RR. (2009). Social and environmental factors associated with preschoolers' non sedentary PA. *Child Development*, 80 (1), 45–58.
- Boldermann, C., Blennow, M., Dal, H., [Mårtensson, F.](#), [Raustorp, A.](#), [Yuen, K.](#) & [Wester, U.](#) (2006). Impact of preschool environment upon children's PA and sun exposure. *Preventive Medicine*, 42 (4), 301–308.
- Cardon, G., Van Cauwenberghe, E., Labarque, V., Haerens, L. & De Bourdaudhuij, I. (2008). The contribution of preschool playground factors in explaining children's PA during recess. *International Journal of Behavioral Nutrition & PA*, 5, 11.
- Coople, C. & Bredekamp, S. (2009). *Developmentally Appropriate Practice in Early Childhood Programs Serving Children from Birth through Age 8*. 3rd ed. Washington, DC: National Association for the Education of Young Children.
- Department of Health, PA, Health Improvement and Protection (2011). *Start Active, Stay Active: A report on PA from the four home countries*. London, UK: Chief Medical Officers.
- Dowda, M., Brown, WH., McIver, KL., Pfeiffer, KA., O'Neill, JR., Addy, CL. & Pate, RR. (2009). Policies and characteristics of the preschool environment and PA of young children. *Pediatrics*, 123 (2), 261–266.
- Dowda, M., Pate, RR, Trost, SG., Almeida, MJCA. & Sirard, JR. (2004). Influences of preschool policies and practices on children's PA. *Journal of Community Health*, 29, (3), 183–195.
- Finn, K., Johannsen, N. & Specker, B. (2002). Factors associated with PA in preschool children. *Journal of Pediatrics*, 140 (1), 81–85.
- Fisher, A., Reilly, JJ., Kelly, LA., Montgomery, C., Williamson, A., Paton, JY. & Grant, S. (2005). Fundamental movement skills and habitual PA in young children. *Medicine & Science in Sports and Exercise*, 37 (4), 684–688.
- Goldfield, GS., Harvey, A., Grattan, K. & Adamo, KB. (2012). PA promotion in the preschool years: a critical period to intervene. *International Journal of Environmental Research & Public Health*, 9 (4), 1326–1342.
- Hannon, JC. & Brown, BB. (2008). Increasing preschoolers' PA intensities: an activity-friendly preschool playground intervention. *Preventive Medicine*, 46 (6), 532–536.
- Institute of Medicine (IOM) (2011). *Early Childhood Obesity Prevention Policies*. Washington, DC: National Academies Press.
- Louie, L. & Chan, L. (2003). The use of pedometry to evaluate the PA levels among preschool children in Hong Kong. *Early Child Development and Care*, 173 (1), 97–107.
- Moore, LL., Gao, D., Bradlee, ML., Cupples, LA., Sundarajan-Ramamurti, A., Proctor, MH., Hood, MY., Singer, MR. & Ellison, RC. (2003). Does early PA predict body fat change throughout childhood? *Preventive Medicine*, 37 (1), 10–17.
- National Association for Sport and Physical Education (2002). *Active Start: a statement of PA guidelines for children birth to five years*. AAHPERD Publications, Oxon Hill, Md.

- Nicaise, V., Kahan, D., & Sallis, J. (2011). Correlates of moderate-to-vigorous PA among preschoolers during unstructured outdoor play periods. *Preventing Medicine, 53* (4-5), 309-315.
- Pagels, P., Boldemann, C. & Raustorp, A. (2011). Comparison of pedometer and accelerometer measures of PA during preschool time on 3- to 5-year-old children. *Acta Paediatrica, 116*–120.
- Pate, RR., McIver, K., Dowda, M., Brown, WH. & Addy, C. (2008). Directly observed PA levels in preschool children. *Journal of School Health, 78* (8), 438–444.
- Pate, RR., Pfeiffer, K., Trost, S., Ziegler, P. & Dowda, M. (2004). PA among children attending preschools. *Pediatrics, 114* (5), 1258–1263.
- Pate, R., O'Neill, J., Brown, W., McIver, K., Howie, E., & Dowda, M. (2013). Top 10 research questions related to PA in preschool children. *Research Quarterly for Exercise and Sport, 84*(4), 448-455.
- Pfeiffer, KA., Dowda, M., McIver, KL. & Pate, RR. (2009). Factors related to objectively measured PA in preschool children. *Pediatric Exercise Science, 21* (2), 196–208.
- Pfeiffer, K., Saunders, R., Brown, W., Dowda, M., Addy, C., & Pate, R. (2013). Study of health and activity in preschool environments (SHAPES): Study protocol for a randomized trial evaluating a multi-component PA intervention in preschool children. *BMC Public Health, 13* (728), 1-8.
- Saakslähti, A, Numminen P, Varstala V, Helenius H, Tammi A, Viikari J. & Valimäki I. (2004). PA as a preventive measure for coronary heart disease risk factors in early childhood. *Scandinavian Journal of Medicine & Science in Sports, 14* (3), 143–149.
- Summerbell, CD., Moore, HJ., Vogele, C., Kreichauf, S., Wildgruber, A., Manios, Y., Douthwaite, W., Nixon, CA. & Gibson, EL. (2012). Evidence-based recommendations for the development of obesity prevention programs targeted at preschool children. *Obesity Reviews, 13* (Suppl 1), 129–132.
- Timmons, BW., Naylor, PJ. & Pfeiffer, KA. (2007). PA for preschool children - how much and how? *Canadian Journal of Public Health, 98* (Suppl 2), 122 -134.
- Trost, SG., Ward, DS., Senso, M. (2010). Effects of child care policy and environment on PA. *Medicine & Science in Sports & Exercise, 42* (3), 520–525.
- Trost, SG., Fees, B. & Dziewaltowski, D. (2008). Feasibility and efficacy of a "move and learn" PA curriculum in preschool children. *Journal of PA and Health, 5* (1), 88 - 103.

CHAPTER

3

FREQUENCY OF GROSS MOTOR ACTIVITIES

CHAPTER OUTLINE

- Level of physical activity during early years
- Importance of physical activity for young children
- Frequency and duration of physical activities during early years
- The content of structured gross motor activities
- Recommendations and practical strategies

3.1 LEVEL OF PHYSICAL ACTIVITY DURING EARLY YEARS

In recent years, the interest of the educational community and educational policies in both physical activity and sedentary behaviour during the early years has increased. Research publications from around the world have showed that young children spend most of the day inactive (Pate et al., 2013; Reilly, 2010) and are characterized by low levels of physical activity and high levels of sedentary behavior (Pate et al., 2013; Pfeiffer et al., 2013; Ross, 2013).

Studies have shown that preschoolers typically spend a substantial amount of time (70%-90% of their day) in sedentary behavior (Gordon et al., 2013; Pfeiffer et al., 2013; Reilly, 2010), in spite of the perception that children are frequently moving during preschool day. This sedentariness appears to manifest early in childhood, with children spending large amounts of time watching television (TV) before the age of 2 (Downing, Hnatiuk & Hesketh, 2015). Another reason for the sedentary behavior among preschool-age children could be the high popularity of electronic devices.

3.2 IMPORTANCE OF PHYSICAL ACTIVITY DURING EARLY YEARS

There are many reasons to teach young children how to properly be physically active. Special attention is needed for this age group because if children are guided to be active in the early years, there is more chance they will remain active as adults (Pate et al., 2013; Ross, 2013).

Obesity is becoming more and more common in younger children especially in the preschool ages of two to five years. Wadsworth et. al. (2012), mention that “the obesity prevalence among preschool-age children has increased from 5 to 12.4% in recent years” (p. 391). There are findings of associations between physical activity and health benefits, in particular preventing overweight and obesity. Similar with this, there are findings indicating that activity typically declines with age, for example between childhood and adolescence. Data from tracking studies reveal an association between higher levels of activity in childhood with more systematic participation in physical activity in later years (Dumith et. al., 2011). Because the risk that childhood inactivity will lead to poor health in later life is very high, it is important to establish a high level of activity at the earliest age in order to encourage activity patterns later in childhood that are sufficient to benefit health.

Apart from the benefits physical activities have on children's health, there are also positive effects on children's cognitive development (developing brain). An active way of life is linked with improvement in academic performance and enhanced brain functions, such as attention and memory. These brain functions are the foundation for learning. Research about the relationship between PA and cognitive outcomes in early childhood has focused largely on the interaction between motor and cognitive skill development (Son & Meisel, 2006). Researchers have found connections between locomotion and the organization of spatial information (Bai & Bertenthal, 1992; Campos et al., 2000). They also found significant relationships between fine motor and hand-eye coordination in kindergarten and early school achievement in mathematics and language (Son & Meisel, 2006).

Long-term studies have demonstrated that increased physical activity during physical education in the school, leads to improved concentration and more efficient transfers of information from short- to long-term memory. Children participating in physical activity stay focused more and remain on task in the classroom, thus enhancing the learning experience ([Castelli et. al., 2014](#)). These evidence for early years are relatively new and derive from different types of studies including both observational and experimental research. Overall, findings support the conclusion that regular physical activity during the early years provides immediate and long-term benefits for physical and psychological well-being (UK Department of Health, 2011).

3.3 FREQUENCY AND DURATION OF PHYSICAL ACTIVITY DURING EARLY YEARS

The educational community is placing its attention the last years to find strategies to increase active behaviors in young children. Children usually like to run, jump, climb, skip, or crawl, and educators should take advantage of this desire and plan as much of their learning around physical activity as they can throughout their day. Preschoolers are typically ready for most physical activities educators plan or encourage.

Despite the limitations of the available knowledge and research, authoritative organizations in four countries issued physical activity guidelines for 3- to 5-year-old children (Canadian Society for Exercise Physiology, 2012; Chief Medical Officers of England, 2011; Department of Health and Ageing, 2010; Institute of Medicine, 2011). Although the wording of the recommendations differs slightly, these organizations all recommend that young

children engage in at least 3 hours of total physical activity each day, which includes light-, moderate-, and vigorous intensity activity. Including light-intensity physical activity for young children reflects their typical activity patterns, which consist of periods of light activity interspersed with short bursts of moderate- and vigorous intensity physical activity (MVPA) (Bailey et al., 1995).

These guidelines are in accordance with the 'National Physical Activity Recommendations for Children 0-5 Years' of the Department of Health and Ageing (Commonwealth of Australia, 2010), supporting the physical activity for 3 hours daily. The recommended 3 hours of physical activity per day can vary in intensity. It can include light intensity activity such as standing up, moving around and playing as well as more vigorous activity such as energetic play. In addition, it should be implemented throughout the daily program rather than all at once. Light activity includes a wide range of activities like standing up and moving around, walking at a slow pace and less energetic play. Moderate activity is similar in intensity to a brisk walk, and could include a whole range of activities like playing at the park, any sort of active play or riding a bike, while vigorous activity will include running, jumping, skipping and may include more organized activities, like dance and gymnastics programs. This graduation aligns with the typical physical activity patterns most naturally occurring during the early years, characterized by short intense bursts of activity broken up by periods of rest or low intensity activity.

The National Association for Sport and Physical Education (NASPE) recommends at least one hour of structured and one or more hours of unstructured physical activity every day (indoors or outdoors), for children from birth to age 5 years (2002). This daily physical activity is not suggested to include competitive sport that are considered not suitable for young children. Instead, the emphasis for this age group needs to be on enjoyment, play and opportunities to learn basic movement skills like walking, jumping, running, throwing, catching and kicking in a non-competitive environment. Preschoolers should develop competence in movement skills that are building blocks for more complex movement tasks.

The differences among the guidelines of these authoritative organizations occur due to differences in measurement tools and inconsistent inclusion of light intensity physical activity (Tucker, 2008). The pattern of physical activity of children of 4 and 6- year old is characterized by an intermittent pattern of long periods of low intensity

activity mixed with very short shots of vigorous activity. Studies showed that mean moderate to vigorous physical activities (MVPA) in preschool children is about 16 minutes per day (Raustorp et. al., 2012). Taking into consideration that the daily physical activity recommendations for preschool children are 60 minutes/day MVPA (NASPE, 2008), it is easily understood that these recommendations for preschool children are not easy to achieve. What has yet to be examined is the level of daily accumulated physical activity required for optimal long-term health in this age group. Bar-Or and Malina (1995) proposed that in young children the emphasis of activity programs should be on developing motor skills rather than on fitness per se. Once the child's skill proficiency has developed, generally by the age of 10 years, more emphasis could then be placed upon fitness.

3.4 THE CONTENT OF STRUCTURED GROSS MOTOR ACTIVITIES

Because young children spend so much time at preschool, preschools have a unique opportunity to help children become healthier and more active, organizing activities which are fun, encouraged exploration and guided-discovery and are focused on active play. The skills that young children develop through active play form the basic building blocks for more specific skill development that may be used in sporting activities in the future.

When educators organize gross motor activities for young children, it is the nature of the activities that is important rather than the intensity. PE curriculum in preschools can vary tremendously based on each preschool's policies and practices regarding active play. Some variations in practice of considerable note are space available for active play, the type and amount of play equipment available, policies on outdoor or indoor gym-time, appropriate physical activity curriculum, as well as staff participation and education level.

National Association for the Education of Young Children (NAEYC) released recommended standards which specifically address the need for preschool children to have varied opportunities and to provide equipment to engage in large motor experiences. These standards promote strategies for large motor experiences that stimulate a variety of skills, enhance sensory-motor integration, develop controlled movement, enable children with varying abilities to have similar experiences, include a range of activities from familiar to new and challenging as well as help learn physical games with rules and structure (NAEYC, 2008).

Socially, children at preschool-age start to engage in informal ‘games with rules’. This happens because at this age, children learn to play in groups of two or more. They progress from parallel play, in which they play side by side but do not interact with one another, to developing associations in their play in which they adopt interactive, assigned roles but with a common goal (Ashiabi, 2007). As this interaction becomes more co-operative, there is a strengthening of peer (external) influence on play behavior, and this behavior continues to increase in complexity (Beck, 2006). The social interaction and increasing breadth of play options parallels the child’s motor skill development.

Considering that fundamental motor skill development, which occurs early in life, is a key underlying component to an active lifestyle, it seems likely that improving gross motor development could influence physical activity level, thus promoting a healthy active lifestyle in early childhood. This means that children rely on gross motor skills to engage in physical activity.

3.5 RECOMMENDATIONS AND PRACTICAL STRATEGIES

This section provides some recommendations and practical strategies for early childhood educators to help them organize gross motor structured activities on a daily basis:

Make Movement Enjoyable

Educators sometimes erroneously assume that external rewards and adult direction motivate young children to move. In fact, research suggests that poor participation in physical activities may stem from a mismatch between a child’s interests and activities provided. The solution is to alter the experiences and make them more engaging and fun. Variation and novelty in motor experiences and equipment may also spark internal motivation. A balance between types of play, materials and equipment, and settings will inspire motivation to learn.

Help All Children Participate

Research on preschoolers suggests that all children, regardless of disabilities, family stressors, or other challenges, want and need to move and participate in physical activities. Girls and boys are equally motivated to learn motor skills, as are most children

with special needs. Every child will benefit from active, indoor and outdoor, gross motor structured activities. The key to engaging all children in gross motor structured activities is careful observation of individual needs and tailoring activities and interactions to address these.

To engage all children, educators should: a) study the interests of individual children and families and design motor activities around these, b) determine the motor skills of individuals and plan activities based on these skills, d) note the peer relationships of individuals and facilitate greater social participation in gross motor activities, e) scaffold play—that is, provide much guidance when children are in great need of support and little or no guidance when they are achieving motor abilities or actively moving on their own.

Send Play Outdoors

Outdoor play from birth to age 5 produces developmental outcomes that simply can't be achieved indoors. Not only does outdoor play foster more active movement, but also more frequent and coordinated peer interactions than play in indoor spaces. Educators can enhance the effects of outdoor play by increasing the number of moveable pieces of playground equipment and reducing (if possible) fixed play structures, and by making spaces completely safe so educators are not required to interrupt play with countless warnings.

Attend to Intensity

It is well documented in the literature that children do not spend enough time playing, either indoors or outside. Merely increasing time on the playground, while extremely important, will not ensure that children get the level of exercise they need for healthy development.

Researchers and professional organizations recommend that young children spend several hours in active play each day, and that at least an hour of this time be spent in moderate to vigorous physical activity (MVPA). This is activity that involves sustained movement and an increase in heart rate. To achieve this MVPA goal for preschoolers, researchers suggest at least a half an hour per day of structured, adult-guided motor activity to keep children moving.

Educators' engagement in the motor activities of children of all ages is critical to achieving motor intensity. They should be as active on the playground as they are indoors in teaching skills and guiding play.

LITERATURE

- Ashiabi GS. (2007). Play in the preschool classroom: its socio-emotional significance and the teacher's role in play. *Early Childhood Education Journal*, 35, 199–207.
- Bai, DL. & Bertenthal, BI. (1992). Locomotor status and the development of spatial search skills. *Child Development*, 63 (1), 215 - 226.
- Bailey, R. C., Olson, J., Pepper, S. L., Porszasz, J., Barstow, T. J., & Cooper, D. M. (1995). The level and tempo of children's physical activities: An observational study. *Medicine and Science in Sports and Exercise*, 27, 1033–1041.
- Bar-Or, O. & Malina RM. (1995) Activity, fitness and health of children and adolescents. In: Cheung LWY, Richmond JB, editors. *Child health nutrition and physical activity*. Champaign, IL: Human Kinetics, p. 79–112.
- Beck, LE. (2006) *Child development* (7th ed). Boston: Peason/Allyn and Bacon.
- Campos, J. J., Anderson, D. I., Barbu-Roth, M. A., Hubbard, E. M., Hertenstein, M.J., & Witherington, D. C. (2000). Travel broadens the mind. *Infancy*, 1, 149-219.
- Canadian Society for Exercise Physiology. (2012). *Canadian physical activity guidelines and Canadian sedentary behaviour guidelines*. Retrieved from <http://www.csep.ca/guidelines>
- Castelli, D., Glowacki, EM., Barcelona, J., Calvert, H. & Hwang, J. (2014). *Active Education: Growing Evidence on Physical Activity and Academic Performance*. Active Living Research.
- Chief Medical Officers of England. (2011). *Start active, stay active: A report on physical activity for health from the four home countries*, Chief medical officers. London, England: Department of Health, Physical Activity, Health Improvement, and Protection.
- Commonwealth of Australia, Department of Health and Ageing, (2010). *National Physical Activity Recommendations for Children 0-5 Years*.
- Danielle D. Wadsworth, D., Robinson, L., Beckham, K. & Webster, K. (2012). Break for Physical Activity: Incorporating Classroom-Based Physical Activity Breaks into Preschools. *Early Childhood Education Journal*, 39, 391 – 395.
- Department of Health and Ageing. (2010). *National physical activity guidelines for Australians: Physical activity recommendations for 0–5 year olds*. Canberra, Australia: Commonwealth of Australia.
- Department of Health, Physical Activity, Health Improvement and Protection (2011). *Start Active, Stay Active: A report on physical activity from the four home countries*. London, UK: Chief Medical Officers.

- Downing, KL., Hnatiuk, J. & Hesketh, KD. (2015). Prevalence of sedentary behavior in children under 2years: A systematic review. *Preventive Medicine, 78*, 105 – 114.
- Dumith, SC., Gigante, DP., Domingues, MR. & Kohl, HW. (2011). Physical activity change during adolescence: a systematic review and a pooled analysis. *International Journal of Epidemiology, 40* (3), 685 – 698.
- Gordon, E., Tucker, P., Burke, S., & Carron, A. (2013). Effectiveness of physical activity interventions for preschoolers: A meta-analysis. *Research Quarterly for Exercise and Sport, 84*(3), 287-294.
- Institute of Medicine. (2011). *Early childhood obesity prevention policies*. Washington, DC: National Academies.
- NASPE_Shape America-Society of Health and Physical Educators (NASPE) (2009). *Active Start: A Statement of Physical Activity Guidelines for Children from Birth to Age 5* (2nd edn.) National Association for Sport and Physical Education.
- National Association for Sport and Physical Education (2002). *Active Start: a statement of physical activity guidelines for children birth to five years*. AAHPERD Publications, Oxon Hill, Md.
- National Association for the Education of Young Children (NAEYC) (2008). *Standard 2: Curriculum—A Guide to the NAEYC Early Childhood Program Standard and Related Accreditation Criteria*. Washington, DC: National Association for the Education of Young Children.
- Pate, R., O'Neill, J., Brown, W., McIver, K., Howie, E., & Dowda, M. (2013). Top 10 research questions related to physical activity in preschool children. *Research Quarterly for Exercise and Sport, 84*(4), 448-455.
- Pfeiffer, K., Saunders, R., Brown, W., Dowda, M., Addy, C., & Pate, R. (2013). Study of health and activity in preschool environments (SHAPES): Study protocol for a randomized trial evaluating a multi-component physical activity intervention in preschool children. *BMC Public Health, 13* (728), 1-8.
- Raustorp A, Pagels P, Boldemann C, Cosco N, Söderström MF (2012). Accelerometer measured level of physical activity indoors and outdoors during preschool time in Sweden and the United States. *Journal of Physical Activity and Health, 9*, 801-808.
- Reilly, J. (2010). Low levels of objectively measured physical activity in preschoolers in childcare. *Medicine & Science in Sports & Exercise, 42*, 502-507.
- Ross, S. (2013). Pre-K physical education: Universal initiatives and teacher preparation recommendations. *Quest, 65* (1), 1-13.
- Son, SH. & Meisels, SJ. (2006) "The Relationship of Young Children's Motor Skills to Later Reading and Math Achievement," *Merrill-Palmer Quarterly, 52* (4), Article 6.
- Tucker, P. (2008). The physical activity of preschool-aged children: A systematic review. *Early Childhood Research Quarterly, 23*, 547-558.
- UK Department of Health (2011). *Start Active, Stay Active: A Report on Physical Activity from the Four Home Countries*. Chief Medical Officers.

CHAPTER

4

TEACHER ENGAGEMENT

CHAPTER OUTLINE

- Introduction
- Characteristics of teacher's engagement
- Practical strategies, guidelines and examples
- Conclusions

4.1 INTRODUCTION

Teachers have an important role in children's life. It is generally accepted, that teachers have a unique opportunity to support and enhance children's overall development through formal schooling (Rink, 2013; Ross, 2013; Stork & Sanders, 2008). The quality of the relationships and interactions between teachers and children in the early years has implications for children's future academic, social and behavioral outcomes (Pianta, Hamre, & Allen, 2012; Stork & Sanders, 2008). Research findings show that a quality relationship between children and teachers could improve children's motivation, engagement, and performance (Pate et al., 2013; Tonge, Jones, Hagenbuchner, Nguyen, & Okely, 2017). In addition, research evidence indicates that a positive relationship with a teacher can operate as a developmental asset for children (Sabola & Pianta, 2012).

Children's activity and movement are influenced by social factors such as teacher engagement and teacher-child relationships and interactions as well as by physical factors, such as the available resources and equipment (Pate et al., 2016; Ross, 2013). The quality of teacher engagement and interactions between teachers and children are key factors in promoting children's physical activity (PA) (Stork & Sanders, 2008; Tonge et al., 2017).

This chapter aims to provide an overview of what we know about teacher engagement and teacher-child relationships and interactions in physical education (PE) and PA. Thus, the chapter is divided into the following two sections. The first section begins with a discussion on teacher engagement and teacher-child relationships and interactions and describes key findings under the following categories: (a) role model, (b) motivation and interactions, (c) motor skill competency, (d) thorough planned and directed activities, (e) multi-component approaches and (f) caring learning

environment. The second section provides practical strategies, recommendations and examples for teachers. It is anticipated that the current knowledge on teacher engagement and its characteristics, can be used by teachers into their everyday practices in helping children to become physically active for a lifetime.

4.2 CHARACTERISTICS OF TEACHER'S ENGAGEMENT

Today a wide repertoire of teacher behaviors that promote child motivation and learning exists in the literature (Rink, 2013). Teacher engagement and teacher-child relationships and interactions constitute key mediators on children's motivations and learning (Tonge et al., 2017; Vollet, Kindermann, & Skinner, 2017). Teacher involvement, engagement, support and acceptance consist some of the behaviors which lead to effective teacher-child relationships (Vollet et al., 2017). These relationships create a circle of participation where children and teachers work together to create an environment in which conducive learning takes place (Pianta et al., 2012; Sabola & Pianta, 2012). The literature indicates that the nature of the teacher engagement and teacher-child relationships and interactions are important practices in creating a positive and supportive environment for the children (Pianta et al., 2012). Teacher engagement has been referred as the affection, availability, efficacy, involvement, energy, and dependability of a teacher to his/her children. It is also deliberated as a positive and enjoyable practice that is characterized by vigor, devotion and interest to children (Schaufeli, Salanova, González-Romá, & Bakker, 2002; Skinner & Belmont, 1993).

Enhancing the quality of teacher engagement and teacher-child relationships and interactions remained a challenge for many educators (Klem & Connell, 2004). Studies examining the effects of teacher-child interactions on young learners' perceptions suggested that this relationship affected children's growth and achievement

(Sabola & Pianta, 2012). Findings also indicated that the quality of early teacher-child interactions had a positive influence on children's self-confidence (Colwell & Lindsey, 2003). Similarly, results have shown that the level of teacher engagement has a positive impact on children achievement (Pianta et al., 2012).

In recent years, significant attention has been paid in finding strategies to increase active behaviors in young children (Gordon, Tucker, Burke, & Carron, 2013; Pate et al., 2013; Pate et al., 2016; Pfeiffer et al., 2013; Rink, 2012). In the literature, teacher engagement and teacher-child relationships and interactions have been proposed as strategies which have the potential to increase active behaviors in children, especially when they are addressed to early childhood education (Rink, 2013; Ross, 2013; Stork & Sanders, 2008; Tonge et al., 2017). A brief review of the literature regarding the features of teacher engagement and teacher-child relationships and interactions follows.

Role model

Teachers are the key persons for promoting PA in early childhood education (Goodway et al., 2014; Pate et al., 2016; Vidoni & Ignico, 2011; Vidoni, Lorenz, & Terson de Paleville, 2014). Teacher engagement affects children's PA levels during childhood. More specifically, teachers and other school staff can be positive role models for children by being physically active inside and outside the school. As Heidorn and Centeio (2012) pointed out "the DPA [the Director of Physical Activity] and faculty and staff members can have a powerful influence on children regarding physical activity habits and behaviors" (p. 15). Moreover, studies found that teachers who are physically active, more often lead by example and can act as role models for young children. Furthermore, teachers who are role models of PA had positive effects on

children PA levels (Castelli & Beighle, 2007; Castelli, Centeio, & Nicksic, 2013; Erwin et al., 2013; Ross, 2013).

Motivation and interaction

Research has shown that teachers have a substantial part in motivating children to be active by modeling and reinforcing a physically active lifestyle (Gordon et al., 2013; Ross, 2013; Pate et al., 2016). Findings of studies have also indicated that teachers can affect children's PA by verbal motivation and interaction (Rink, 2013). Thus, the task of the teacher is to encourage and motivate children to actively participate in PA. In addition, as research has shown, the success of a PA program depends on the characteristics, motivation and engagement of the teacher (Castelli et al., 2013; Heidorn & Centeio, 2012; Stork & Sanders, 2008).

Motor skill competency

Several scholars suggest that part of promoting children's PA lies within the school (Casteli et al., 2013; Erwin et al., 2013; Pate et al., 2013; Pfeiffer et al., 2013). As a result, scholars suggest that the early childhood teacher should offer children with opportunities to become physically active from a young age (Stork & Sanders, 2008; Vidoni & Ignico, 2011; Vidoni et al., 2014). The literature suggests that one of the keystones of a physically active lifestyle is motor skill competency (Goodway & Robinson, 2006). Therefore, the development of fundamental motor skills (FMS) in early years is critical for children's participation in PA (Stodden & Goodway, 2007), especially given prior findings documenting a positive relationship between FMS and PA (Clark, 2005, 2007). According to scholars, preschool teachers should use all opportunities to help children develop their knowledge, FMS, and confidence to be

physically active for a lifetime (Goodway & Robinson, 2006; Goodway, Ruri, & Bakhtiar, 2014).

Thorough planned and directed activities

The literature also suggests that most of the times, the early childhood teacher is the responsible person to offer PA opportunities that are integrated into several aspects of the school program (Ross, 2013; Stork & Sanders, 2008). Teachers must select and plan meaningful and age appropriate activities for children to participate in PA during school (Rink, 2010). Teachers are the key persons who can organize, coordinate, and supervise indoors and outdoors, structured and unstructured activities (Gordon et al., 2013; Pate et al., 2013; Pate et al., 2016; Pfeiffer et al., 2013). Consequently, efforts to increase PA opportunities in the school curriculum must be thorough planned and directed by the teachers who are aware of the needs and interests of their children (Casteli et al., 2013; Ross, 2013; Stork & Sanders, 2008).

Multi-component approaches

As already noted above, the preschool teacher is a key person in offering PA opportunities in schools. Research studies indicate that specific instructional practices and particular multi-component approaches can be used to enhance children's PA and physical competences (Pate et al., 2013; Pate et al., 2016; Stork & Sanders, 2008). One of such approaches is the comprehensive school physical activity program (CSPAP) which aims to enhance PA through five components: (a) PE lessons, (b) PA during school, (c) PA before and after school, (d) staff involvement, and (e) family and community involvement (Erwin, Beighle, Carson, & Castelli, 2013; Ross, 2013). Today there are many indications to support the positive outcomes within each CSPAP

component as well as the entire approach. More specifically, the teacher and other school staff engagement component of the CSPAP approach has been supported by evidence that is an effective practice in enhancing children's PA patterns. As a result, teachers and other school personnel should provide opportunities and motivate all children to participate in a plethora of PA (Erwin et al., 2013; Rink, 2012; Ross, 2013; Vidoni & Ignico, 2011; Vidoni et al., 2014).

Caring learning environment

A caring and safe environment, as it is reflected in the teacher engagement and teacher-child relationships and interactions, can contribute to young children's improvement of PA and overall development (Ross, 2013; Stork & Sanders, 2008). Children feel safer, energetic, and are willing to be actively engaged in activities, when their teachers create a caring well-structured learning environment with high expectations (Klem & Connell, 2004; Rink, 2010, 2013). Low-quality teacher engagement set children at risk since they may experience negative influence by others (Vollet et al., 2017). Research evidence also demonstrated that practices such as teacher's support, encouragement and caring are important for increasing children's participation in PA (Kouli, Grammatikopoulos, Gregoriadis, & Zachopoulou, 2015). Children need to feel that their teacher is creating a safe and positive environment and that he/she engages them into the teaching and learning process by showing high levels of interest, motivation and encouragement (Erwin et al., 2013; Rink, 2013).

4.3 PRACTICAL STRATEGIES, GUIDELINES AND EXAMPLES

Research findings indicate that teachers need to use effective teaching practices in order to enhance children's positive experiences during PA and PE (Rink, 2013). The

literature suggests that teacher engagement is an important practice in promoting PA to children (Erwin et al., 2013; Heidorn & Centeio, 2012). Taking into account current research evidence, it seems that teachers need to be actively engaged during the lesson, provide accurate supervision to children, circulate around the room during instruction and provide guidance and feedback to children. They also need to differentiate their instruction by implementing a variety of teaching strategies in order to address the different learning needs of their children (Rink, 2010, 2013; Stork & Sanders, 2008). The literature, today, provides us with the evidence that support specific recommendations for actions to enhance PA of children. This section presents good strategies, guidelines and examples of how teachers can promote PA to young children. These recommendations can help early childhood teachers implement effectively, characteristics of teacher engagement and teacher-child relationships and interactions in preschool settings.

School Program

- Adopt a multi-component approach to promote PA. Successful school programs use multi-component approaches, such as offering a combination of activity breaks throughout the day. Consider the CSPAP approach since it works nicely in schools.
- Incorporate into the school program activities that change PA levels.
- Integrate PA into classroom, academic instruction, and breaks.
- Use active classroom break times. As an example, take 10 minutes during instruction and perform physical movements or dance with children in the classroom.

- Encourage and support children to be actively engaged during recess time. As an example, the teacher can provide equipment to children, organize activities, and engage physically with them in games.

Progressive Activities

- Prepare activities that encourage children to be actively involved in PA.
- Plan consecutive activities that help children to develop their FMS.
- Plan activities that are fun and enhance children's positive feelings and self-confidence.
- Give children a choice on what activities they would like to get involved with and participate with them in these activities.
- Select games and activities that ensure high levels of engagement in PA.
- Plan activities in which all children can succeed. Children have different skill levels and the activities need to be adjusted based on their needs to maximize participation.

Participate in activities with children

- Participate in children's structure and unstructured activities and free play and make all the necessary arrangements to facilitate learning.
- Involve in activities with children, assume roles, have enthusiasm and motivate children to be actively and energetically engaged in the games. As an example, the teacher may assume a main role during an game, in which he/she will play against the children. His/ her reaction and enthusiasm will lead children play with the same energy and passion.
- Participate in activities with children and assign roles and responsibilities to them in order to enhance their self-confidence. As an example, the teacher could

participate in activities with children. She/he can ask children to assess his/her participation by giving them a simple check list.

- Get involved with in a variety of activities with children and measure their PA levels after specific activities. Discuss with them and provide further ideas of how their PA levels could be increased.

Supervise and direct children's activities

- Ensure that children's structure and unstructured activities are directed by teachers.
- Ensure that during structure or unstructured play children feel and have the positive support of the teacher.
- Observe how children are engaged in activities, how they perform in these activities, and ask children questions to make sure that conducive learning is taking place. As an example, when a teacher participates in a game following children's instructions of how to perform an activity, it will be easy to identify any misconceptions that the children may have. As a result, in the next lesson the teacher can plan and implement the right activities in order to enhance knowledge and improve children's learning.

Create a positive and caring environment

- Create positive relationships and a friendly environment.
- Have high expectations from all children and ensure that they are provided with quality PA.
- Encourage children to be actively engaged in all activities.
- Motivate and support children during their participation in PA.

- Give children a voice by discussing with them questionable issues. Caring teachers are able to understand children's thoughts and feelings and are able to solve any problems or debatable issues. As an example, when children play games, teacher may have the referee role by stopping the game at specific times and discussing with them what was right or wrong in specific instances. By doing this, the teacher creates opportunities for discussion in order to reduce children's conflicts during or after the lesson.

4.4 CONCLUSIONS

Based on this brief review, we can conclude that there is enough evidence in the literature suggesting that young children who have the opportunity to be engaged regularly in PA are more likely to have a healthy lifestyle, are able to make better lifestyle choices, and have better academic achievement. Research pinpoints to comprehensive approaches and teaching practices which have great potential to promote young children's PA (Erwin et al., 2013; Rink, 2012; Ross, 2013; Stork & Sanders, 2008). Children's PA level can be maximized during the school when the teacher and other school staff members systematically promote PA, support children in their efforts to be physically active, and view physical activity as a positive behavior that affects all other aspects of one's life (Castelli et al., 2013; Gordon et al., 2013; Heidorn & Centeio, 2012; Pate et al., 2013; Pate et al., 2016; Rink, 2013). Overall, teacher engagement is considered as a mediator between teacher and children in gaining the expected outcomes. Accordingly, it seems that this practice appears to be one of the most appropriate for improving PA in preschool-aged children.

LITERATURE

- Castelli, D., & Beighle, A. (2007). The physical education teacher as school activity director. *Journal of Physical Education Recreation & Dance*, 78(5), 25-28.
- Castelli, D., Centeio, E., & Nicksic, H. (2013). Preparing educators to promote and provide physical activity in schools. *American Journal of Lifestyle Medicine*, 7(5), 324-332.
- Clark, J. (2005). From the beginning: A developmental perspective on movement and mobility. *Quest*, 57(1), 37-45.
- Clark, J. (2007). On the problem of motor skill development. *Journal of Physical Education, Recreation & Dance*, 78(5), 39-44.
- Coldwell, M.J., & Lindsay, E.W. (2003). Teacher-child interactions and preschool children's perceptions of self and peers. *Early Child Development and Care*, 173(2-3), 249-258.
- Erwin, H., Beighle, A., Carson, R., & Castelli, D. (2013). Comprehensive school-based physical activity promotion: A review. *Quest*, 65(4), 412-428.
- Goodway, J., & Robinson, L. (2006). SKIPing toward an active start: Promoting PA in preschoolers. *Beyond the Journal: Young Children*, 61(3), 1-6.
- Goodway, J., Ruri, F., & Bakhtiar, S. (2014). Future directions in physical education & sport: Developing fundamental motor competence in the early years is paramount to lifelong physical activity. *Asian Social Science*, 10(5), 44-54.
- Gordon, E., Tucker, P., Burke, S., & Carron, A. (2013). Effectiveness of physical activity interventions for preschoolers: A meta-analysis. *Research Quarterly for Exercise and Sport*, 84(3), 287-294.
- Heidorn, B., & Centeio, E. (2012). The director of physical activity and staff involvement. *Journal of Physical Education Recreation & Dance*, 83(7), 13-26.
- Klem, A.M., & Connell, J.P. (2004). Relationships matter: Linking teacher support to student engagement and achievement. *Journal of School Health*, 74(7), 262-273.
- Kouli, O., Grammatikopoulos, V., Gregoriadis, A., & Zahopoulou, E. (2015). Measuring the quality of Movement-Play Scale in Greek Early Childhood Education settings. *Journal of Physical Activity, Nutrition and Rehabilitation*. PANR e-ISSN: 2421-78241, 1-13.
- Pate, R., Brown, W., Pfeiffer, K., Howie, E., Saunders, R., Addy, C., & Dowda, M. (2016). An intervention to increase physical activity in children: A randomized controlled trial with 4-year olds in preschools. *American Journal of Preventing Medicine*, 51(1), 12-22.
- Pate, R., O'Neill, J., Brown, W., McIver, K., Howie, E., & Dowda, M. (2013). Top 10 research questions related to physical activity in preschool children. *Research Quarterly for Exercise and Sport*, 84(4), 448-455.
- Pfeiffer, K., Saunders, R., Brown, W., Dowda, M., Addy, C., & Pate, R. (2013). Study of health and activity in preschool environments (SHAPES): Study protocol for a randomized trial evaluating a multi-component physical activity intervention in preschool children. *BMC Public Health*, 13(728), 1-8.
- Pianta, R.C., Hamre, B.K., & Allen, J.P. (2012). Teacher-student relationships and engagement: Conceptualizing, measuring, and improving the capacity of classroom interactions. In S.L. Christenson, A.L. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 365-386). New York, NY: Springer.
- Rink, J. (2010). *Teaching physical education for learning* (6th ed). New York: McGraw-Hill.
- Rink, J. (2012). The role of directors of comprehensive school physical activity programs: Introduction. *Journal of Physical Education Recreation & Dance*, 83(6), 15-28.
- Rink, J. (2013). Measuring teacher effectiveness in physical education. *Research Quarterly for Exercise and Sport*, 84(4), 407-418.
- Ross, S. (2013). Pre-K physical education: Universal initiatives and teacher preparation recommendations. *Quest*, 65(1), 1-13.
- Sabola, T., & Pianta, R. (2012). Recent trends in research on teacher-child relationships. *Attachment & Human Development*, 14(3) 213-231.
- Schaufeli, W.B., Salanova, M., González-Romá, V., & Bakker, A.B. (2002). The

- measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *Journal of Happiness Studies*, 3(1), 71-92.
- Skinner, E.A., & Belmont, M.J. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of Educational Psychology*, 85(4), 571-81.
- Stodden, D., & Goodway, J. (2007). The dynamic association between motor skill development and physical activity. *Journal of Physical Education, Recreation and Dance*, 78(5), 33-49.
- Stork, S., & Sanders, S. (2008). Physical education in early childhood. *Elementary School Journal*, 108(3), 197-206.
- Tonge, K., Jones, R., Hagenbuchner, M., Nguyen, T., & Okel, A. (2017). Educator engagement and interaction and children's physical activity in early childhood education and care settings: An observational study protocol. *BMJ Open*, 7:e014423.
- Vidoni, C., & Ignico, A. (2011). Promoting physical activity during early childhood. *Early Child Development and Care*, 181(9), 1261-1269.
- Vidoni, C, Lorenz, D., & Terson de Paleville, D. (2014). Incorporating a movement skill programme into preschool daily schedule. *Early Child Development and Care*, 184(8), 1211-1222.
- Vollet, J.W., Kindermann, T.A., & Skinner, E.A. (2017). In peer matters, teachers matter: Peer group influences on students' engagement depend on teacher involvement. *Journal of Educational Psychology*, 109(5), 635-652.

CHAPTER

5

STUDENT SUPERVISION

CHAPTER OUTLINE

- Contribution of children's supervision to children's learning
- Recommendations and practical strategies for child supervision

5.1 CONTRIBUTION OF CHILD'S SUPERVISION TO CHILD'S LEARNING

Child supervision is deemed an important teaching practice for effective instruction of physical education (PE) or physical activity (PA) (Rink, 2010; Siedentop & Tannehill, 2000). Although as a term, active supervision, is used variously in the PE and PA literature, to be effectively achieved, it should include three key elements: (a) supervising children practice/play to ensure a safe environment, (b) insisting on and encouraging children's participation by providing positive and constructive feedback, and (c) modifying learning activities to make them individually interesting and challenging (Hastie & Martin, 2006). The coexistence of all three abovementioned elements, not only ensures children's safety, but also lays the groundwork to maximize their participation. As Hastie and Siedentop (1999) argue, child active supervision and accountability of children's practice/play determines the quality of the work that children accomplish, since it is through this teaching practice that children's on-stated-task behavior can be observed and adjusted.

Teacher's overall supervision of children's practice/play can take five different forms (see Figure 1). The first form refers to the 'no supervision' condition, during which the teacher does other chores than monitoring or supervising children's involvement (e.g., organizes the equipment for a subsequent activity). The second form concerns the 'monitoring' condition in which the teacher mostly watching children to practice/play without encouraging or providing them with any feedback (e.g., the teacher is monitoring children's practice/play and he/she only intervenes when he/she notices possible safety issues). The third form pertains to teacher behavior that reinforces children's practice/play, through encouraging them to engage in or keep on practicing/playing and making positive comments for their efforts [e.g., the teacher praises children's practice/play using verbal (i.e., good job) or non-verbal (i.e., shaking

head affirmatively) communication]. The fourth form refers to teacher’s feedback during practice/play, and specifically, the constructive feedback, which helps children understand what elements of practice/play are practicing well, and which elements need to be corrected in order to keep practicing/playing in an appropriate (or desirable) way. Such feedback should be positive, specific and congruent to the appropriateness/correctness of practice/play or the focus of the activity (e.g., the teacher reminds children during practice/play that they should bend their knees when they roll the ball). Finally, in the fifth form, when teachers realize that a part of an activity or the whole activity needs to be changed or adjusted for some particular children or the whole class, they intervene and modify the learning activity to make it interesting and challenging for those children (e.g., the teacher realizes that certain children do not hit the target when they roll the ball, thus he/she reduces the distance among that/those child/children and the target or he/she uses a bigger target, to help children succeed more).

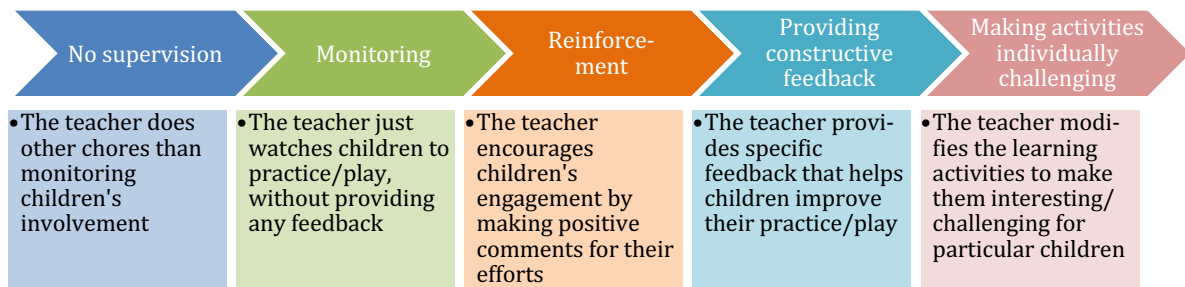


Figure 1. The five different forms of child supervision.

The remainder of this chapter is divided into two sections. The first section involves an overview of what research has shown about the contribution of child supervision to child learning. The second section provides some useful recommendations and practical strategies of child supervision which can be adapted to

each school's/class's specific needs or particularities and used during the daily PE and/or PA structured or unstructured activities.

As previously mentioned, to be effectively achieved, child supervision should include three key elements (i.e., supervising children practice/play to ensure a safe environment; insisting on and encouraging children's participation by providing positive and constructive feedback; modifying learning activities to make them individually interesting and challenging). These elements have been examined, either individually or jointly, through several past and more recent research studies, and their significance has been empirically supported.

Beginning with the first two elements (i.e., supervising children practice/play, and encouraging them to participate by providing positive and constructive feedback), the majority of research studies seem to converge that more effective teachers typically provide more feedback, although the findings may not always relate feedback to increased achievement (Lee, Keh, & Magill, 1993; Tannehill, van der Mars, & MacPhail, 2015). For example, Hastie's (1994) study indicated that teacher feedback and teacher intervening interactions were associated with higher amounts of children's academic learning time. Similarly, an experimental study which examined three different supervisory conditions of child practice showed that either close or distant supervision combined with specific skill feedback produced higher levels of on-task performance rather than the distant supervision which was not combined with any feedback (Sariscsany, Darst, & van der Mars, 1995). Likewise, the study of Schuldheisz and van der Mars (2001), which investigated the effect of two supervisory conditions (i.e., passive vs active) on children's moderate to vigorous PA levels, underlined that active supervision, which involved encouragement, prompts, and feedback directly affected the target child's moderate to vigorous PA levels.

Turning to the specificity and congruence of the feedback, studies from all three levels of education (i.e., kindergarten, primary, and secondary) confirmed the significant role of constructive feedback. For instance, Oslin, Stroot, and Siedentop's (1997) study showed that component-specific feedback helped pre-school children to improve the efficiency of a manipulative skill. Similar results were noticed in other studies in primary (e.g., Kyriakides, 2016; Rikard, 1991), secondary (e.g., Silverman, Kulinna, & Crull, 1995; Silverman, Tyson, & Krampitz, 1992) or even tertiary education (e.g., De Knop, 1986), showing that teachers who provided congruent and specific feedback during child practice had children who had greater learning gains; and that active supervision distinguished among most-effective and non-most effective teachers. In addition, this type of feedback has been shown to be useful for both low- and high-skilled children, helping them improve their practice success (Pellett & Harrison, 1995).

As far as the third key element of child supervision is concerned (i.e., modifying activities to make them individually interesting and challenging), scholars support that appropriate practice and child learning are improved when the learning activities are adjusted to the skill level of the children (Hastie & Martin, 2006; Rink, 2010; Siedentop & Tannehill, 2000). In addition, differentiated instruction seems to enhance children's persistence, motivation, autonomy, and enjoyment, while at the same time it reduces boredom, off-task behavior, disengagement, frustration, and embarrassment (Rovegno & Bandhauer, 2016). Therefore, teachers should take into consideration children skill level not only during planning of instruction, but also during actual teaching by differentiating/modifying their activities to help children of all skill levels to be successful (Siedentop & Tannehill, 2000; Silverman, 1993; Tannehill et al., 2015).

Research evidence in the field of PE indicates that child learning and motivation can be enhanced, when teachers modify the learning activities to make them more interesting or challenging for particular children. For instance, a recent study showed that teaching approaches that provide more support for child's autonomy and active involvement, have the potential to enhance learning (Shen, McCaughtry, Martin, & Fahlman, 2009). Moreover, two other studies showed that children, who experienced easy-to-difficult practice progressions, had increased successful and appropriate practice trials than others who practiced the actual skill without any progressions (French et al., 1991; Hebert, Landin, & Solmon, 2000).

5.2 RECOMMENDATIONS AND PRACTICAL STRATEGIES FOR CHILD SUPERVISION

In this section we provide some recommendations and practical strategies of child supervision, which can be adapted to meet the particular needs of each school/class. These recommendations, which are based on the literature of effective teaching in PE and PA, attempt to make more concrete how teachers should actively supervise child practice/play. The following strategies are organized around the three aforementioned key elements of child supervision.

Supervising Children Practice/Play

- Always supervise children's participation in structured or unstructured practice/play to ensure safety, smooth function, and address any possible child needs.
- When supervising structured or unstructured practice/play, keep notes or bear in mind children's interests or needs for specific movements/topics or misconceptions, and incorporate them in your lesson planning. Ask children questions for clarifications if needed.

Encouraging Participation and Providing Constructive Feedback

- When observing children who do not participate in practice/play, discuss with them and find ways to engage them in. Insist on and try to find the reasons why a certain child does not want to participate, as this will help you engage him/her to the practice/play more easily.
- When supervising structured or unstructured practice/play, use verbal (i.e., bravo!, go on!, good job!, etc.) or non-verbal ways (i.e., gestures or facial signs of approval, such as smiling, shaking head affirmatively, giving a high-five, patting children on the back/shoulder, clapping, embracing joyfully, maintaining eye contact) to praise or encourage child actions/behaviors.
- When observing children's practice/play, you can use children's ideas and build on or develop them (by asking questions) to move learning a step forward.
- When supervising structured or unstructured practice/play, provide constructive feedback. This type of feedback is always positive and specific/congruent to the appropriateness/correctness of practice/play or the critical elements of an emphasized psychomotor skill (i.e., Good job Peter! You've nicely bent your knees while rolling the ball! Now, try to also smoothly swing the hand that holds the ball, from back to front).

Modifying Activities to Meet Individual Needs/Interests

- Offer choices for the level of difficulty. Let children choose the distance, size of target or equipment, speed, direction, height, etc. of the proposed activity. For example, when teaching the long jump, teachers can use a tape to mark on different spots of the ground the symbol '<'. Asking children to choose a spot to stand on the one side of the symbol (i.e., the one diagonal line) and perform

a long jump to land on the other side (i.e., after the other diagonal line), gives the opportunity to children to choose the distance they feel more confident to jump. Similarly, when teaching dribbling, teachers can give the opportunity to children to match the speed of their movement to their ability. However, during practice teacher's role is to provide constructive feedback and check whether each child selected the appropriate speed. In addition, teachers can provide multiple activities (variations of an activity which target the emphasized skill of the lesson), and ask children to choose which activity to practice (see Rovegno & Bandhauer, 2016, for more information about this key element).

LITERATURE

- De Knop, P. (1986). Relationship of specified instructional teacher behaviors to student gain on tennis. *Journal of Teaching in Physical Education*, 5(2), 71-78. doi: 10.1123/jtpe.5.2.71.
- French, K., Rink, J., Rikard, L., Mays, A., Lynn, S., & Werner, P. (1991). The effects of practice progressions on learning two volleyball skills. *Journal of Teaching in Physical Education*, 10(3), 261-274. doi: 10.1123/jtpe.10.3.261.
- Hastie, P. A. (1994). Selected teacher behaviors and student ALT-PE in secondary school physical education classes. *Journal of Teaching in Physical Education*, 13(3), 242-259. doi: 10.1123/jtpe.13.3.242.
- Hastie, P., & Martin, E. (2006). *Teaching elementary physical education: Strategies for the classroom teachers*. San Francisco, CA: Pearson Education.
- Hastie, P., & Siedentop, D. (1999). An ecological perspective on physical education. *European Physical Education Review*, 5(1), 9-29. doi: 10.1177/1356336X990051002.
- Hebert, E., Landin, D., & Solmon, M. (2000). The impact of task progressions on students' practice quality and task-related thoughts. *Journal of Teaching in Physical Education*, 19(3), 338-354. doi: 10.1123/jtpe.19.3.338.
- Kyriakides, E. (2016). *Combining generic and content-specific practices in exploring teaching quality in physical education and its impact on student learning* (Unpublished doctoral dissertation). University of Cyprus, Nicosia.
- Lee, A., Keh, N., & Magill, R. (1993). Instructional effects of teacher feedback in physical education. *Journal of Teaching in Physical Education*, 12(3), 228-243. doi: 10.1123/jtpe.12.3.228.
- Oslin, J. L., Stroot, S., & Siedentop, D. (1997). Use of component-specific instruction to promote development of the overarm throw. *Journal of Teaching in Physical Education*, 16(3), 340-356. doi: 10.1123/jtpe.16.3.340.
- Pellett, T. L., & Harrison, J. M. (1995). The influence of a teacher's specific, congruent, and corrective feedback on female junior high school students' immediate volleyball practice success. *Journal of Teaching in Physical Education*, 15(1), 53-63. doi: 10.1123/jtpe.15.1.53.
- Rikard, G. L. (1991). The short term relationship of teacher feedback and student practice. *Journal of Teaching in Physical Education*, 10(3), 275-285. doi: 10.1123/jtpe.10.3.275.
- Rink, J. E. (2010). *Teaching physical education for learning* (6th ed.). New York, NY: McGraw-Hill.
- Rovegno, I., & Bandhauer, D. (2016). *Elementary physical education: Curriculum and instruction* (2nd ed.). Burlington, MA: Jones & Bartlett Learning.
- Sariscsany, M. J., Darst, P. W., & van der Mars, H. (1995). The effects of three teacher supervision patterns on student on-task and skill performance in secondary physical education. *Journal of Teaching in Physical Education*, 14(2), 179-197. doi: 10.1123/jtpe.14.2.179.
- Schuldheisz, J. M., & van der Mars, H. (2001). Active supervision and students' physical activity in middle school physical education. *Journal of Teaching in Physical Education*, 21(1), 75-90. doi: 10.1123/jtpe.21.1.75.
- Shen, B., McCaughtry, N., Martin, J., & Fahlman, M. (2009). Effects of teacher autonomy support and students' autonomous motivation on learning in physical education. *Research Quarterly for Exercise and Sport*, 80(1), 44-53.
- Siedentop, D., & Tannehill, D. (2000). *Developing teaching skills in physical education* (4th ed.). Mountain View, CA: Mayfield.
- Silverman, S. (1993). Student characteristics, practice and achievement in physical education. *The Journal of Educational Research*, 87(1), 54-61. doi: 10.1080/00220671.1993.9941166.
- Silverman, S., Kulinna, P. H., & Crull, G. (1995). Skill-related task structures, explicitness, and accountability: relationships with student achievement. *Research Quarterly for Exercise and Sport*, 66(1), 32-40. doi: 10.1080/02701367.1995.10607653.
- Silverman, S., Tyson, L., & Krampitz, J. (1992). Teacher feedback and achievement in physical education: interaction with student practice. *Teaching and Teacher Education*, 8(4), 333-344. doi: 10.1016/0742-051X(92)90060-G.

Tannehill, D., van der Mars, H., & MacPhail, A. (2015). *Building effective physical education programs*. Burlington, MA: Jones & Bartlett learning

CHAPTER

6

ENCOURAGING CHILDREN'S KINETIC ACTIVITIES

CHAPTER OUTLINE

- The contribution of physical activity in preschool education
- Children's sensitization towards a naturally active way of living
- Children's positive experiences from their participation in kinetic activities
- Instructions for encouraging children towards a naturally active way of living

6.1 THE CONTRIBUTION OF PHYSICAL ACTIVITY IN PRESCHOOL EDUCATION

Preschool aged children display a very strong tendency for movement. A big part of their learning occurs through the use of their body, which makes movement one of the most basic learning factors. Movement and the use of body have a multiple meaning for a child (Gallahue, & Donnelly, 2003). A research about the human brain (Promislow, 2005) gave emphasis to the fact that early learning is based on kinetic development; this means that movement is the most preferable and most dominant way of learning because children comprehend concepts in a better way if they are physically active (Promislow, 2005). For instance, it is easier for children to comprehend certain quantitative concepts such as small-big, high-low, wide-narrow when they use their body.

In other words, it seems that using kinetic games and kinetic activities is a particularly effective tool for learning at a preschool age. Respectively, a daily program that includes an abundance of kinetic activities can bridge the distance between playing and more official ways of learning which can be met in school athletic activities. Most kinetic development experts (e.g. Byrne, & Hills, 2007), agree that playing is an essential part of a highly qualitative learning program. Playing is not a mere break from learning, but the way young children learn. The self-guided, informal game offers young children a chance to participate in a wide range of kinetic activities which possibly provide young children with various possibilities to develop a positive attitude towards sports, kinetic games, physical activities and a more active way of living in the future (Zachopoulou & Kouli, 2017). Structured activities and the free nature of kinetic games create an environment that facilitates the sense of enjoyment and satisfaction, something that may be absent from the children's daily routine in and out of school. This kind of activities and their consequent emotional feedback (the euphoria and joy deriving from physical activities and movement) are described by researchers and teachers as the safest way to enforce children's motivation in order that they participate in kinetic activities (Liukkonen, 2010).

Consequently, active kinetic programs should be an inextricable part of the natural development of all children (Byrne, & Hills, 2007; Sutterby, 2009). When researchers investigate children's general development, they cannot underestimate the contribution of physical activity programs to their overall progress. A daily program

enriched with various kinds of kinetic activities, such as kinetic games, will most probably lead children to a healthier way of living, even at the preschool age. According to R. Wickstrom (1970), “where there are children, there is an almost incessant movement” (page 11).

6.2 CHILDREN’S SENSITIZATION TOWARDS A NATURALLY ACTIVE WAY OF LIVING

The first years are considered a landmark for the health and welfare of the rest of life. The adoption of a healthy way of living even at an early age is an important target, especially when it is related to existing genetic and environmental dimensions. More specifically, children’s lack of knowledge and familiarization with healthy diet and physical activity, combined with a genetic tendency to gain weight, may possibly lead to an unhealthy weight development, which will cause consequent negative health implications in the future (Byrne, & Hills, 2007; Yanovski, & Yanovski, 2003).

While children are encouraged to increase their levels of physical activity, they should also develop strategies to reduce the behaviours of a non-active way of living (Parizkova, & Hills, 2005). In order to influence the knowledge and attitudes of preschool aged children, parents, teachers and policy makers should combine forces in a coordinated way.

When it comes to educational interventions, it is important to focus on the children’s crucial behaviors and attitudes leading to excessive weight rather than the environment of the class or the content of the activities. The environment factors which lead to a healthier or unhealthier way of living must be examined in the light of their ability to contribute to the frequency of the behaviors that increase or reduce the possibility of becoming obese (Hill & Peters, 1998; Hill, Wyatt, Reed & Peters, 2003; Young & Hills, 2007). For instance, teachers can influence the nature and quantity of the physical activities in which children participate. This influence can be direct or indirect. When teachers provide children with a school environment (internal or external) that promotes well explained physical activities, they can be directly influential. In addition, they can influence the children with their personal attitudes, i.e. setting an example by participating in several physical activities. Similar arguments have been developed by Moore et al. (1991), in relation to the influence of parents. These authors mention that preschool aged children whose parents are physically active are more likely to behave in a similar way, compared to their peers

whose parents are physically inactive. Furthermore, Young and Hills (2007) mention that adults who create environments which promote physical activity and function as models of physical activity themselves influence young children to adopting a significantly higher frequency of physical activity behaviors, in relation to children who live in environments less motivational.

The previous years, the majority of educational programs and initiatives to prevent child obesity and teach a healthier way of living focused mainly on primary school children rather than preschool ones. However, the last years researchers and health professionals seem to include preschool aged children as well in their target groups. Considering that obesity does not show signs of recession, it is obvious that the 'battle' against the environments which lead to the gradual increase of children's body weight must begin at a younger age (Hill, Wyatt, Reed & Peters, 2003). Preventing sedentary life at an early age offers important advantages against child obesity and encourages children to adopt a healthier way of living. This can be achieved through the creation and realization of programs that will help children acquire knowledge on the components of a healthy and physically active life. Such programs must be planned carefully, taking into consideration the children's age and needs. The educational institutions responsible for creating policies must comprehend the necessity to develop intervention programs and courses that will not only provide chances for physical activity, but they will also promote an attitude towards a healthy way of living and its adoption for life (Zachopoulou & Kouli, 2017).

Another reason for which the adoption of a healthy way of living is important at a preschool age is the fact that most habits (dietary or athletic) are easier to acquire at this age rather than at the age of high school (Wetton, 2005). Consequently, it is hard to design and apply actions which prevent obesity effectively and promote a healthy way of living without reinforcing children's comprehension on what is important or without changing the basic behaviors that contribute to the increase of body weight.

6.3 CHILDREN'S POSITIVE EXPERIENCES FROM THEIR PARTICIPATION IN KINETIC ACTIVITIES

In order for children to acquire positive experiences through participation in kinetic activities or games, it is important that these activities and games as well as the general environment of the class provoke fun and interest, cover their needs and motivate their participation (Papaioannou, Theodoraki & Gouda, 2003).

Motivation refers to human action and its defining factors. Through motivation one can explain and analyze the reasons why people choose to do something, the intensity with which they do it and whether they will continue doing it or not (Alderman, 1974). According to Singer (1980), motivation is responsible for: (1) choosing and preferring an activity, (2) continuing doing this activity. (3) the intensity and vitality of its performance and (4) the adequacy of its performance, according to the existing levels. More specifically, the result of motivation reflects people's reaction to internal motives, since they choose activities which they believe are capable of producing satisfaction

The ability and success in kinetic activities is a basic factor of motivation (Roberts, Kleiber & Duda, 1981). Thus, children who feel skillful in kinetic activities display high motivation, while children with limited skills are not easily motivated to participate. Nonetheless, children should take up kinetic activities appropriate to their individual needs i.e. present challenges which meet their personal abilities. At this point it is very important for children to be able to evaluate their skills by themselves (Papaioannou & Kouli, 1999).

Furthermore, there are theories in the field of motivation for achievement (Dweck & Leggett 1988; Nicholls 1992) and researches (Duda 1989; Duda, Fox, Biddle & Armstrong 1992) which mention that there are at least two aspects concerning the way someone perceives his/her participation in kinetic activities or Physical Education. The first aspect which is called "orientation to the project" focuses on learning, improving and responding to the demands of the activity. Any perception concerning personal ability comes from the person him/herself. The success criteria are subjective and depend on whether the person believes that he/she has improved or learnt something. Thus, any subjective failure is rather improbable, since mistakes are considered as part of the learning process and a guide for future improvement. The state of "orientation to the project" renders a child happy with his/her personal achievement, interested in improving and hard working. The second aspect which is called "orientation to the ego" mainly focuses on "surpassing the others" (Duda 1989; Duda, Fox, Biddle & Armstrong 1992). At this state, a person creates his/her perception concerning personal ability according to models and his/her success is based on the comparison with other people's performances. Such persons develop negative feelings when they are found to be on a lower level than the others.

As a result, they hardly try to succeed, in order to have a plausible excuse for failing and it is very possible that they will stop trying after a number of failures.

As mentioned in a research by Nicholls (1989), the previously mentioned two aspects are not inter-dependable. This means that orientation to the project and orientation to the ego are not necessarily opposite concepts. A person can be intensely orientated to the project and ego at the same time, a little orientated to both states or highly orientated to the first in relation to the other (Duda, 1988).

Concerning the role of school environment, previous studies (e.g. Treasure & Roberts, 1995) showed the inability of teachers to reinforce children's motivation in order to participate in kinetic activities at an early age. Teachers create and children adopt a psychological climate that intervenes in their effort to achieve any intended targets (Ames, 1992; Roberts, 1992; Ames & Archer, 1988). This psychological climate implicates children in certain self-evaluation procedures and leads them to adopt either an orientation to the project or to ego. Teachers have two important options regarding motivation: they can choose the "competitive" model where the criterion of success is the result of the performance or the "educational" model where the criterion of success is learning/improvement. There are studies (Ames & Archer, 1988; Duda, Chi, Newton, Walling & Catley, 1995) which prove that a motivation climate based on work is positively related to the orientation to the project and interest to the program/lesson. On the contrary, a competitive motivation climate leads children to adopt an orientation to the ego.

According to the above, when a teacher places more emphasis to competition and evaluation using the performances of the others as criteria, it is obvious that the children will be driven to the orientation to the ego. On the contrary, when the environment emphasizes on learning, improvement of skills, hard effort and participation for pleasure, then children will be driven to the orientation to the project. In addition, other studies (Ames & Archer 1988; Ames 1992; Papaioannou, 1994) have shown that a "motivational climate" can influence children towards an orientation to the project or ego. As a result, in order for children to acquire positive experiences from a kinetic activity, a teacher should create a favorable motivation climate, which will improve their skills within an ambient of acceptance and encouragement.

Finally, it is widely accepted that structured kinetic activities can influence children's motivation and commitment to physical activity, because movement has

the ability to promote positive experiences for them (Hagger, Chatzisarantis, Culverhouse, & Biddle, 2003; McKenzie, 2007; Pratt, Macera, & Blanton, 1999). The above conclusions are generally valid for all ages, but they are particularly significant for preschool aged children (Liukkonen, 2007), because that age establishes the basis of their social behavior and their incorporation to the social environment, as well as their attitude towards physical activity and a generally active way of living (Liukkonen, 2010).

6.4 INSTRUCTIONS FOR ENCOURAGING CHILDREN TOWARDS A NATURALLY ACTIVE WAY OF LIVING

A way to familiarize and encourage children towards an healthy and naturally active kind of living is the daily participation in kinetically active programs with a suitable developmental organization, during which the teacher uses various strategies to induce children's active participation for the biggest part of the activity. According to Zachopoulou and Kouli (2017), to apply these strategies a teacher should:

- Plan the activities so as to give children enough time to be kinetically active to run, bounce, climb etc.
- Give emphasis to cooperation instead of competition, so that every child has the chance to complete the activity.
- Give motives to children (e.g. verbal praise and small awards) for their naturally active way of living.
- Organize indoor activities, because children need to be active even when the weather deters outdoor activities.
- Encourage children to participate in activities, without pressing them when they are reluctant.
- Participate actively in the activities becoming a role model. Young children copy adults and follow their example.
- Adjust the intensity levels of the activities to the physical condition of the children.
- Change or modify the activities when some children show signs of fatigue and invent games and activities with the children, motivating their interest.
- Create a program incorporating activities which activate different muscular units.

Furthermore, according to various researchers (Jones-Hamilton, 2002; Siedentop & Tannehill, 2002; Good & Brophy, 1987; Siedentop, 1983), teachers should apply certain strategies, in order to create a motivational and therefore positive learning environment, in which children could enjoy the positive results of their participation. These strategies are:

- To separate the children in to small groups (no more than four children per group).
- To take advantage of all the available material.
- To organize the groups in a way that they do not obstruct one another.
- To reduce the instruction time (give plain, clear and precise instructions).
- To individualize training considering the personal differences among children and allow them to participate in the activities continually and successfully. In order to do so, a teacher must:
 - Modify the degree of difficulty of an activity (use variations of an exercise or change its style),
 - Create challenging exercises (slightly more difficult than the children's ability to perform),
 - Create different kinds of challenges (simultaneous performance of different movements, different complexity).
- Manage lesson time effectively, since the time which is devoted to effective practical training is a strong learning index. In order to do so, a teacher must:
 - Start lesson immediately (minimize gathering time, absence control, etc)
 - Minimize the time needed for organizing the lesson, using routines (applying fast and effective ways to divide groups, distribute material, etc).
 - Maximize the time during which children are occupied with the subject.

LITERATURE

- Alderman, R.B. (1974) *Psychology Behavior in Sport*. Philadelphia: W.B. Saunders Company.
- Ames, C. (1992). Classrooms: goals, structures and student motivation. *Journal of Educational Psychology*, 84(3) 261-271.
- Ames, C., & Archer, J., (1988). Achievement goals in the classroom: Students' learning strategies and motivation processes. *Journal of Educational Psychology*, 80, 260-267.
- Byrne, N.M., & Hills, A.P. (2007). The importance of physical activity in the growth and development of children. In: A.P. Hills, N.A. King, & N. M. Byrne. (Eds.). *Children, Obesity and Exercise. Prevention, treatment and management of childhood and adolescent obesity*, pp. 50-60. London & New York: Routledge.
- Duda, J.L., (1988). The relationship between goal perspectives and persistence and intensity among recreational sport participants. *Leisure Sciences*, 10, (95-106).

- Duda, J.L., (1989). Relationship between task and ego orientation and the perceived purpose of sport among high athletes. *Journal of Sport & Exercise Psychology*, 11, 318-335.
- Duda, J.L., Chi, L. Newton, M., Walling, M., & Catley, D., (1995). Task and ego orientation and intrinsic motivation in sport. *International Journal of Sport Psychology*, 26, 40-63.
- Duda, J.L., Fox, K.R., Biddle, S.J.H., & Armstrong, N., (1992). Children's achievement goals and beliefs about success in sport. *British Journal of Educational Psychology*, 62, 313-323.
- Dweck, C.S., & Leggett, E.L.,(1988). A Social cognitive approach to motivation and personality. *Psychological Review*, 95, 256-273.
- Gallahue, D. Donnelly, F. (2003). *Developmental physical education for all children*. Champaign: Ill: Human Kinetics.
- Hagger, M., Chatzisarantis, N., Culverhouse, T., & Biddle, S.J.H. (2003). The Processes by Which Perceived Autonomy Support in Physical Education Promotes Leisure-Time Physical Activity Intentions and Behavior: A Trans-Contextual Model. *Journal of Educational Psychology*, 95(4), 784-795.
- Good, T.L. & Brophy, J.E.(1987). *Looking in classrooms*. NY: Harper & Row.
- Hill, J.O., & Peters, J.C. (1998). Environmental contributions to the obesity epidemic, *Science*, 280, 1371-1374.
- Hill, J.O., Wyatt, H.R., Reed, G.W., & Peters, J.C. (2003). Obesity and Environment: Where Do We Go from Here? *Science*, 299 (5608), 853-855.
- Hill, J.O., Wyatt, H.R., Reed, G.W., & Peters, J.C. (2003). Obesity and Environment: Where Do We Go from Here? *Science*, 299 (5608), 853-855.
- Jones-Hamilton, L. (2002). Measuring effective teaching. www.uncw.edu/cte/et/Resnotes/Jones-Hamilton/index.htm
- Liukkonen, J. (2007). Teacher's role in promoting children's intrinsic motivation towards physical activity. In E. Zachopoulou, N. Tsangaridou, I. Pickup, J. Liukkonen, V. Grammatikopoulos, (Eds.) 'Early Steps'. *Promoting healthy lifestyle and social interaction through physical education activities during preschool years*. pp. 23-26, Thessaloniki: Xristodoulidi Publications.
- Liukkonen, J. (2010). Promoting Children's Sound Personality Development and Intrinsic Motivation Towards Physical Activity. In E. Zachopoulou, J. Liukkonen, I. Pickup, N. Tsangaridou (Eds.) *Early Steps Physical Education Curriculum. Theory and Practice for Children Under 8*. pp. 31-40, United States: Human Kinetics.
- McKenzie, T.L. (2007). The Preparation of Physical Educators: A public health perspective. *Quest*, 59, 346-357.
- Moore, L.L., Lombardi, D.A., White, M.J., Campbell, J.L., Oiveria, S.A., & Ellison, R.C. (1991). Influence of parents' physical activity levels on activity levels of young children, *Journal of Pediatrics*, 118, 215-19.
- Nicholls, G.J. (1992). The general and the specific in the development and expression of achievement motivation. In G. Roberts (Ed.). *Motivation in sport and exercise* (pp. 31-55). Champaign, IL: Human Kinetics.
- Nicholls, J.G. (1989). *The Competitive Ethos and Democratic Education*. Cambridge M.A.: Harvard University Press.
- Papaioannou, A. (1994). The development of a questionnaire to measure achievement orientations in physical education. *Research Quarterly for Exercise and Sport*, 65, 11-20.
- Papaioannou, A., Theodorakis, Y., & Goudas, M. (2003). *For a better physical education*. Thessaloniki: Publications, Christodoulidi. [in Greek language]
- Papaioannou, A., & Kouli, O. (1999). The effect of task structure, perceived motivational climate and goal orientations on students' intrinsic motivation and anxiety. *Journal of Applied Sport Psychology*, 11, 51-71.
- Parizkova, J., & Hills, A.P. (2005) *Childhood Obesity: Prevention and Management*, 2nd edition, Boca Raton, FL: CRC Press.

- Pratt, M., Macera, C.A., & Blanton, C. (1999). Levels of physical activity and inactivity in children and adults in the United States: current evidence and research issues. *Medicine & Science in Sports & Exercise*, 31, 526-533.
- Promislow, S. (2005). *Making the brain – body connection*. Vancouver, BC: Enhanced Learning and Integration.
- Roberts, G.C. (1992). *Motivation in sport and exercise*. Champaign, IL: Human Kinetics.
- Roberts, G.C., Kleiber, D.L., Duda, J.L., (1981). An analysis of motivation in children's sport. The role of perceived competence in participation. *Journal of Sport Psychology*, 3, 206-216.
- Siedentop, D. (1983). Academic learning time; reflecting and prospect. *Journal of Teaching in Physical Education*. (Monograph 1), 3-7.
- Siedentop, D., & Tannehill, D. (2002). *Developing Teaching skills in Physical Education*. CA: Mayfield
- Singer, R.N. (1980). Motivation in Sport. In *Psychology in Sports: Methods and Applications*. R. Suin (Ed.), Min: Burgess Pub. Co.
- Sutterby, J. (2009). What kids don't get to do anymore and why. *Childhood Education*, 85(5), 289-292.
- Treasure, D.C., & Roberts G.C., (1995). Applications of Achievement Goal Theory to Physical Education: Implications for Enhancing Motivation. *Quest*, 47, 475-489.
- Wetton, P. (2005). *Physical education in the nursery and infant school*. London: Routledge.
- Wickstrom, R. (1970). *Fundamental Motor Patterns*, Philadelphia, PA: Lea and Febiger.
- Yanovski, J.A., & Yanovski, S.Z. (2003). Treatment of pediatric and adolescent obesity. *Journal of the American Medical Association*, 289(14), 1851–1853.
- Young, J., & Hills, A.P. (2007). Childhood obesity. In: A.P. Hills, N.A. King, & N. M. Byrne. (Eds.). *Children, Obesity and Exercise. Prevention, treatment and management of childhood and adolescent obesity*, pp. 1-10. London & New York: Routledge.
- Zachopoulou, E. & Kouli, O. (2017). *Physical Education at the Beginning of the 21st Century. Aims-Goals-Purposes in Preschool Age*. Thessaloniki, Publications: Afoi Kyriakidi. [in Greek language]

CHAPTER

7

EVALUATION OF CHILDREN'S KINETIC ACTIVITY

CHAPTER OUTLINE

- Evaluation
- Evaluation in education
- Evaluation in preschool education
- Children's evaluation
- Evaluation methods (observation and portfolio)
- Instructions for observing kinetic activities

7.1 EVALUATION

According to Dimitropoulos (2007a), evaluation is an internationally acclaimed cognitive subject which, despite the fact that there are indications that the first evaluation procedures date back to the third millennium BC, in its modern scientific sense (i.e. as an autonomous scientific field), has been in use for just a few decades. Nevertheless, the concept and content of evaluation has not yet been fully defined, since there is a plethora of approaches among evaluation theorists (Grammatikopoulos, 2004).

There are two basic evaluation distinctions: a) the distinction between internal and external evaluation and b) the distinction between formative and summative evaluation. Internal evaluation is exercised by the personnel of an institute or those who are involved in the evaluation procedures (e.g. children, employees). On the contrary, external evaluation is exercised by people who are not involved in the design or implementation of the evaluation procedures (Scriven, 1991). Formative evaluation (Scriven, 1967) is carried out during the evaluation procedure and aims at providing information which can lead to improving or re-designing parts of the specific procedure. On the other hand, summative evaluation (Scriven, 1967) is carried out after the completion of the evaluation procedures and intends to ascertain the practicality of the results of the procedures (e.g. whether an educational procedure facilitates the “preservation” of learning). Result evaluation (Chinapah & Miron, 1990) concerns the assessment of a procedure (e.g. the final test on a subject). The various forms of evaluation either belong to one of the above categories or they try to incorporate one or more kinds of evaluation, in order to be more functional.

The two most usually applied forms of evaluation are the external summative and the internal formative evaluation (Fitzpatrick, Sanders, & Worthen, 2004). Nonetheless, a most effective evaluation does not concern the use of a certain procedure, but rather an eclectic approach, which probably uses a combination of forms of evaluation (House, 1991; Nevo, 2001; Dimitropoulos, 2007a).

7.2 EVALUATION IN EDUCATION

When evaluation is used in the field of education, the specialized term which is preferably used is “educational evaluation”. As Grammatikopoulos (2004) suggests, although there is no general consensus on the definition of educational evaluation, many

scientists agree that educational evaluation is the procedure that defines the degree to which the aims of an educational system –or part of them– have been fulfilled (schedule, subject, teaching method, performance etc) (Calder, 1995; Kassotakis, 1990; Chinapah & Miron, 1990).

In his effort to summarize all the existing tendencies, Dimitropoulos (2007a) gives the following definition: “Educational evaluation is the compositional and organized procedure during which the processes, systems, individuals, means, frameworks or results of an educational mechanism are estimated according to pre-defined criteria and pre-defined purposes” (p 27). Thus, the usual approach to the definition of educational evaluation depends on the relation between the outcome of an educational effort and its educational targets.

For an evaluation to be effective there must be clearly defined criteria on which its conclusions are based. Dimitropoulos (2007a) mentions that a criterion is the basic axis, in order to make a judgment. The selection of criteria is influenced by the kind, the subject and the aim of the evaluation. The procedure of selecting criteria has been a field of concern for many researchers (Cronbach, 1982; Dimitropoulos, 1999; Worthen & Sanders, 1987). Generally, there is no specific procedure for selecting criteria or rules to define them. In every evaluation there are particularities which impose certain criteria. Consequently, the selection of criteria depends on the special needs of each evaluation procedure, the nature of the subject under evaluation or the philosophical and theoretical preferences of each assessor. Criteria can be distinguished, according to their characteristics, as external, internal, quantitative and qualitative or as design, procedure and result criteria (Dimitropoulos, 2007a).

7.3 EVALUATION IN PRESCHOOL EDUCATION

The main target of evaluation in pre-school education is to gather the necessary information that can lead to the correct decisions in relation to children’s development (Nagle, 2000). To better understand the role of evaluation in preschool education one must group its targets into specific categories. According to Nagle (2000), this classification creates four large groups of evaluation targets in preschool education: (a) inspection, (b) diagnosis, (c) individual planning and surveillance of the program and (d) evaluation of the program. More analytically, “inspection” refers to the evaluation procedures for many children, in order to detect the ones who may need further evaluation. “Diagnosis” refers to the evaluation procedures which are applied to

children who need further inspection. “Individual planning and surveillance of the program” refers to every evaluation which gives information that can be used for re-programming and surveying the program and “evaluation of the program” is every evaluation which deals with the quality of a program.

Each of the above categories demand a different evaluation procedure, because the collected information serves different purposes. However, each evaluation procedure must take into consideration the general principles which are valid in all evaluations. More specifically, each evaluation must take place for the benefit of children and therefore, both its design and use must serve this particular purpose. It must also be highlighted that the validity and credibility of an evaluation as well as its content and methods must be suitable for the specific age of the children (Grammatikopoulos, 2010). It is also important to mention that parents and family in general are a valuable source of information for any evaluation at the preschool age.

Evaluation in the classroom is the collection of elements and information concerning the development and cognitive state of children and it provides the opportunity to criticize the results and the teaching methods. To effectively evaluate a class, the assessor needs: a) validity (if the applied test measures what is to be measured), b) credibility (if a child is graded in the same way in two consecutive days) and c) objectivity (if two different assessors evaluate the same child in a similar way). As Dimitropoulos (2007b) mentions, both the activities related to the teaching itself and the activities related to the evaluation must depend directly on the educational purposes and targets set. This relation can be seen in certain variations as follows: Definition of educational purposes => provision of learning experiences => evaluation.

7.4 CHILDREN’S EVALUATION

According to Dimitropoulos (2007b), evaluation has been defined as “the effort and procedure to assess the value of “something”. This “something” can be persons, institutions or systems and is called subject of evaluation (p 24).

Wortham and Hardin (2016) classify evaluation into four basic principles, which claim that the evaluation of a child must: (a) use multiple sources of information, (b) benefit the child and improve his/her learning, (c) include his/her family and (d) be fair for all children. To evaluate children at a preschool age, the same researchers (Wortham & Hardin, 2016) propose eight basic principles, which claim that the evaluation of a child must: (a) consider that the progress/achievement of young children

should be continuous and purposeful, (b) consider that the progress/achievement of young children, which is related to targets is important developmentally and educationally, (c) include a system for the collection, understanding and use of the evaluation information, which will interpret the environment of the class, (d) be suitable and in accordance with the developmental level and experiences of young children, (e) estimate the things that children can do either by themselves or with the help of other students or adults, (f) include information about the children's families and the parents' assessments in relation to their children's activities, (g) be used exclusively for purposes in which the specific evaluation has been proved to be credible and valid and (h) consider that the decisions which have a significant impact on children must not be based on the results of only one evaluation.

The evaluation of physical activity can be used to assess children (for their kinetic performance, cognitive understanding, emotional/perceptive functionality and social functionality), teachers, programs/lessons and class environments (Avgerinos, 2007).

7.5 EVALUATION METHODS: OBSERVATION AND PORTFOLIO

Current literature provides a plethora of evaluation methods (e.g. Wortham, & Hardin, 2016), which can be applied for the evaluation of children and their performances, according to their state of development. Some of them are: kinetic evaluation tests, cognitive evaluation tests (oral or written), papers and projects, self-evaluation or inter-evaluation, observation (traditional or systematic), recording and creation of portfolios.

In relation to children's evaluation, there are references concerning "the evaluation of a child" or "the evaluation of a child's performance". However, Dimitropoulos (2007b) believes that a teacher should consider a child as a distinctive person, as an entity with his/her own potentials, needs and weaknesses, as a person who functions independently and self-efficiently and who learns and performs at his/her own pace. Consequently, a child's evaluation should be individualized and refer to the child as a whole, perceiving his/her performances as part of his/her interests. In other words, the aim of a child's evaluation should be first the child him/herself as a "person/whole" and then his/her performance.

The individualized approach when evaluating a a child's physical activity allows first the mapping of the child's personal performance and then supporting its

improvement. Evaluation methods such as observation and recording of observations in a separate portfolio for each child (Zografou, Kamberi & Birbili, 2006) can help each child separately (especially younger children).

Observation

The use of observation as a qualitative evaluation method, has a distinguished place in the field of dynamic evaluation. There are more than one methods of observation, which can be used depending the reason they are used for. Every observation method has its advantages and disadvantages. According to Dimitropoulos (2007b), observation can be separated into two different levels: (1) the unofficial level, known as the “traditional” method of observation and (2) the “systematic” level, known as “systematic observation” (Rink, 1998).

Observation is called *Traditional*, when the activities observed are limited to the unorganized and spontaneous relationship between the teacher and the child. Methods of traditional observation are:

- i) Intuitive observation, which is not systematic and therefore its results are unreliable and without validity. It is applied when there is no need to record specific elements or when there is need for only a general idea.
- ii) The unedited file, which is the recording of elements/incidents (without evaluation) during a lesson/program. Evaluation takes place when the file is complete.

Observation is *Systematic*, when the process of recording and analyzing an event provides the certainty that if another person or machine recorded the same event they would arrive at the same conclusions (Darst, Zakrajsek, & Mancini, 1989). Methods of systematic observation are:

- i) Rubrics/checking lists, which are suitable for a qualitative evaluation of events. Definitions must be clear, and assessors must be trained in order that this evaluation method can be credible.
- ii) The recording of events, which is a systematic method and is used to ascertain the existence or non-existence of behaviours and incidents during the performance of skills that have been taught, with valid and credible data.
- iii) The recording of duration, which provides valuable information on the way teachers use the time of the lesson/program. It is useful for long events and gives valid and credible data, on condition that the teacher is adequately trained.

iv) Time sampling (or interval recording), which is used for events that do not change fast in time, as well as for skills which are taught fragmentally, in more than one lessons/programs.

Observation has been used very successfully, as a method to assess a person. This method is even more efficient in the school environment, considering that it is carried out by the teacher him/herself, who has the chance to observe a child in his/her natural environment, for relatively long periods of time and record his/her honest reactions and his/her natural behaviour.

According to Dimitropoulos (2007b), the main advantages of observation, which render it a useful and important evaluation method, can be summarized as follows:

1. It increases remarkably the systematization of the effort to assess children and therefore, it improves the level of the gathered information on them. Thus, the evaluation of children becomes more essential and more credible.
2. It enables the realistic application of the skills connected to the children's knowledge, in their natural learning environment.
3. When observation is correct, the behaviour observed is natural, unbiased, unfeigned and therefore, representative of the overall, typical behaviour of a child.
4. When observation is carried out by the teacher, it can be continuous and consequently, less subjective to failure.

In the class environment, observation has particularly great potentials, due to the children's long and daily stay in class and due to their long-term relationship with their teacher. This contact offers an observant teacher the possibility to get closer to children than he/she could achieve in any other way. The combination of daily communication and observation constitutes the spine of the application of a dynamic evaluation of children.

Recording of observations in a Portfolio

In the recent years, particular attention has been paid to a child's evaluation as "entity", "individual" or "learning person". This holistic evaluation of children is currently expressed in the British bibliography with the term "Authentic Assessment" (Torrance, 1995). The central ideas of this tendency are the multiplicity of criteria, the combinatorial techniques, the variety of means and materials, the diachronic-evolutionary and continuous procedures, as well as everything that represents the

philosophy of a Dynamic Evaluation. The efforts to apply the above philosophy in education have led, in recent years, to the development of an evaluation technique based on the personal Portfolio of each child.

The portfolio is a personal file which is kept and updated by the child him/herself, while at younger ages the whole procedure is carried out with the cooperation of the teacher. This file includes elements which reflect the child's efforts, successes, assignments, activities etc, in a way indicative of the child-person (Δημητρόπουλος, 2007β).

Concerning kinetic activities, Tzetzis (2007) supports that the collection of the elements that constitute the child's personal file is an evaluation method which takes place at a specific time and includes elements that concern one or more issues (e.g. physical activities, kinetic skill etc). It also has a specific duration, set by the teacher (e.g. six or eight teaching units), during which the child him/herself or with the cooperation of the teacher (or the teacher him/herself, depending on the age of the child) must collect the elements and data concerning the specific subject and deriving from various evaluation approaches, observation or other relative activities.

More specifically, the portfolio of preschool aged children can be very useful for the teacher who records data, through observation (Pate, McIver, Dowda, Brown & Addy, 2008), because it offers material for each child separately, which can be used: (a) by the teacher, in order to evaluate the child and the lesson/program in general, (b) to inform parents about the progress of their child, (c) to help the child set goals and be motivated and (d) to guide the child towards the right orientation (Gallahue, 1996; Morrison, 2007).

7.6 INSTRUCTIONS FOR OBSERVING KINETIC ACTIVITIES

Furthermore, there are certain indicative observational points which can be made by the teacher during the execution of children's kinetic skills. According to Zachopoulou and Kouli (2017), such observational points, which concern the achievement of goals in the developmental domains (kinetic, cognitive, emotional, and social) of preschool aged children, are:

Observational points concerning the domain of kinetic development

Children must be able to:

- Move ahead or sideways, while executing various kinetic skills, and change direction fast, responding to an instruction.
- Execute quick or slow movements, with obvious differences in the speed of the execution.
- Walk or run, according to their level of development.
- Roll sideways without stopping.
- Through or receive a ball, before bouncing.
- Kick a steady ball, performing an even, continuing movement.
- Keep an instant balance, supporting their weight on various parts of the body.

Observational points referring to the field of cognitive development

Children must be able to:

- Modify the elements of movement.
- Use parts of their body in various ways.
- Make decisions, taking risks and inventing their own games or activities.
- Solve simple, kinetic problems, giving many different and original solutions/movements.
- Pose questions and express queries.
- Make comparisons between sizes and quantities, discovering similarities and differences.

Observational points referring to the field of emotional development

Children must be able to:

- Participate throughout the duration of an activity.
- Participate actively in new activities.
- Cooperate with other children.
- Trust other children.
- Respect the feelings of other children.
- Distinguish between joy and sadness from the expression of other children.
- Respond directly to the teacher's recommendations.

Observational points referring to the field of social development

Children must be able to:

- Cooperate with all children, regardless of their personal differences such as gender, nationality or level of skills.
- Cooperate with small or large groups, understanding the value of group effort in order to achieve a goal.
- Follow rules, for the sake of the effective cooperation of the group.
- Offer their help to other children and be able to assist persons with special needs.
- Play various roles, becoming either leaders or just members of the group.
- Suggest their ideas while accepting the ideas of other children.
- Share various objects as well as the available space.
- Follow the rules of an activity.
- Wait for their turn to participate, without annoying the rest of the children.
- Follow the instructions and rules given by the teacher.
- Respect the decisions of the people in charge.
- Take care of the various objects used and put them in the proper place.

LITERATURE

- Avgerinos, A. (2007). Principles for the implementation of the Physical Education course. In E. Kioumourtzoglou (Ed.) *Physical Education at the Beginning of the 21st Century. Aims-Goals-Purposes. Theoretical Approaches*, pp.53-88. Thessaloniki, Publications: Afoi Kyriakidi. [in Greek language]
- Calder, J. (1995). *Programme Evaluation and Quality: A Comprehensive Guide to Setting up an Evaluation System*. London: Kogan Page.
- Chinapah, V., & Miron, G. (1990). *Evaluating Educational programmes and Projects: Holistic and Practical Considerations*. Paris: UNESCO.
- Cronbach, L. (1982). *Designing evaluations of educational and social programs*. San Francisco: Jossey-Bass.
- Darst, P., Zakrajsek, D., & Mancini, V. (1989). *Systematic observation instrumentation for physical education*. Champaign, IL: Leisure Press.
- Dimitropoulos, G.E. (1999). *Evaluation of Education and Training Programs*. Athens: Grigoris Publications. [in Greek language]
- Dimitropoulos, G.E. (2007a). *Educational Evaluation. Part One: Assessment of education and training*. Athens: Grigoris Publications. [in Greek language]
- Dimitropoulos, G.E. (2007b). *Educational Evaluation. Part Two: Student Assessment, Theory-Practice-Problems*. Athens: Grigoris Publications. [in Greek language]
- Fitzpatrick, J.L., Sanders, J.R., & Worthen, B.R. (2004). *Program evaluation. Alternative approaches and practical guidelines* (3rd ed.). Boston: Allyn & Bacon.
- Gallahue, D.L. (1996). *Developmental Physical Education for Today's Children* (3rd edition). Brown & Benchmark Publishers.
- Grammatikopoulos, V. (2010). Evaluation Methods. In E. Zachopoulou, J. Liukkonen, I. Pickup, N. Tsangaridou (Eds.) *Early Steps Physical Education Curriculum. Theory and Practice for Children Under 8*. pp. 189-194, United States: Human Kinetics.

- Grammatikopoulos, V. (2004). The evaluation of physical education programs. *Ektivolos, Journal of Hellenic academy of Physical Education*, 2, 9-10.
- House, E.R. (1991). Realism in research. *Educational Researcher*, 20, 2-22.
- Kassotakis, M. (1990). *The Assessment of Student Performance*. Athens: Grigoris Publications. [in Greek language]
- Morrison S.G. (2007). *Early Childhood Education Today* (10th Ed.) Pearson Education Ltd.
- Nagle, R.J. (2000). Issues in Preschool Assessment. In: B.A. Bracken (Ed.), *The Psycho-Educational Assessment of Preschool Children*, (pp. 19-32). Neidham Heights, MA: Allyn & Bacon.
- Nevo, D. (2001). School evaluation: Internal or external. *Studies in Educational Evaluation*, 27, 95-106.
- Pate, R.R., McIver, K., Dowda, M., Brown H.W., Addy C. (2008). Directly Observed Physical Activity Levels in Preschool Children. *Journal of School Health, Volume 78*, Issue 8, pp. 438-444
- Rink, J. (1998). *Teaching Physical Education for Learning* (3rd ed.). (1998). USA: McGraw-Hill.
- Scriven, M.S. (1967). The methodology of evaluation. In: R.E. Stake (Ed), *AERA Monograph series on curriculum evaluation No 1*. Chicago: Rand McNally.
- Scriven, M.S. (1991). *Evaluation thesaurus* (4th ed). Thousand Oaks, CA: Sage.
- Torrance, H. (1995). *Authentic Evaluation*. Oxford: Open University Press.
- Tzetzis, G. (2007). Assessment and alternative forms of assessment in physical education. In E. Kioumourtzoglou (Ed.) *Physical Education at the Beginning of the 21st Century. Aims-Goals-Purposes*. pp.107-128. Thessaloniki, Publication: Afoi Kyriakidi. [in Greek language]
- Wortham, S.C., & Hardin, B. (2016). *Assessment in Early Childhood Education* (7th ed.). Pearson.
- Worthen B.R., & Sanders, J.R. (1987). *Educational evaluation. Alternative approaches and practical guidelines*. N.Y.: Longman.
- Zachopoulou, E. & Kouli, O. (2017). *Physical Education at the Beginning of the 21st Century. Aims-Goals-Purposes in Preschool Age*. Thessaloniki, Publications: Afoi Kyriakidi. [in Greek language]
- Zografou, M., Kaberi, E., Birbili, M. (2006). *The use of the portfolio in pre-school education*. In D. Kakanas, K. Botsoglou, N. Chaniotakis & E. Kavalari (Ed.). *Assessment in Education: Pedagogical and Teaching Dimension* (239-246). Thessaloniki: Afoi Kyriakidi. [in Greek language]

CHAPTER

8

PARENT BRIEFING

CHAPTER OUTLINE

- Communicating with the family
- Parent's contribution on the child's physical activity level
- Parent briefing for the child's physical activity profile
- Recommendations and practical strategies

8.1 COMMUNICATING WITH THE FAMILY

The European Commission/EACEA/Eurydice (2016) acknowledges the undeniable need for families to be fully involved in all aspects of their child's education and care. In order to achieve this goal, it is crucial to create the conditions for a friendly environment with trust and openness between the family and the child's educators. Such an environment can facilitate effective partnership and communication between parents and children.

Parents and the home learning environment they develop are their child's first educators and have an in-depth knowledge of the child's strengths and weaknesses. That is why establishing and nurturing genuine communication between the family and the teachers, benefits everybody. The main factor for effective communication is without doubt the existence of mutual trust. When working side-by-side with families, educators should engage in a thorough communication with them in order to share information about their children's experiences, health and needs and to contribute to joint interventions that support the children's overall development.

Educators face many challenges in their daily interaction with families. In these relationships a wide range of family structure types and different cultures coexist (Desforges & Abouchaar, 2003). The communication that the schools have to establish with the parents/families also require time and affective availability on behalf of all educators: they have to be able to listen to the concerns, desires and expectations of each parent and each family.

Time is a very important factor in the communication with parents. The arrival of the child to the nursery school/preschool in the morning and the departure in the afternoon is intended solely for the exchange of basic information about the child. The educator must know how to listen and also understand the parents' desire for a more comprehensive discussion and recognize when to dedicate more time to them. A parent should then have the opportunity to talk to the educator who will be able to attend to their wishes, doubts and problems.

To communicate with the parents, it's not always a one time activity with a clear start or finish, but rather a process, designed and shaped by ECEC services and parents together. The process aims at building and strengthening the partnerships necessary for the education of young children while sharing the decision-making power (Peters et al., 2007).

It is therefore important that early childhood educators establish a systematic briefing of parents about the progress, interests, needs and daily experiences of children in a timely and effective manner. The educators have to understand that this interaction should be a dialogic and bilateral process in which educators and families together share and discuss information concerning the children. Engaging families in educational contexts implies the use of means that allow both parties to understand each other, since communication is the tool that enables the school-family relationship (Goodall & Vorhaus, 2011).

The educators must constantly keep in mind the important role they have both for children's education, but also for the guidance of the family. The educator is often a person families can trust or open up to because they know that given information will not be misused, and that the educator will try to help them. In the event that additional support is required, an educator can advise and guide parents to the appropriate services, and help them "cope with potential problems". In addition, educators can exchange information among them about their students and their families. Such information exchange, must of course have the consent of the families and should always aim at supporting children at risk. A communication culture, based on the establishment of an effective trust partnership between families and educators, facilitates transitions and educational continuity between contexts and thus generates benefits for the children (European Commission/EACEA/Eurydice, 2016).

8.2 PARENT'S CONTRIBUTION ON THEIR CHILD'S PHYSICAL ACTIVITY LEVEL

An important characteristic of effective communication among teachers and parents is that each participant treats the other with respect and has the opportunity to freely express his or her opinions. The educator should function as an open platform, capable of receiving different opinions, perspectives and experiences, and afterwards integrate these information to his/her teaching practices in a way that can benefit children.

One of the main goals of the education for young children is to increase the level of children's physical activity (PA), which in turn results to health promotion. Regarding this goal, families can also play a catalytic role for its completion.

The dimensions revolving around the issue of physical activity are complex, as there are numerous factors at multiple levels (e.g., individual, interpersonal, environmental) that can affect the behaviours of children (Wilk et al., 2018). Developing effective interventions and policies requires an examination of the interrelationships between these factors and the mechanism through which they influence PA (Smith et al., 2010).

Interpersonal or social factors have been known to influence PA and may be the most important and modifiable determinants of PA (Gustafson & Rhodes, 2006). In particular, parents play an important role in the development of children's health behaviours and they can affect the PA behaviours of their children through a variety of mechanisms (Maatta et al., 2013; Trost & Loprinzi, 2011). Parental encouragement for an active way of life and parent's own PA are two modifiable factors that can affect activity-related behaviours among children (Tandon et al., 2014).

According to Per Beets and colleagues, parental support “represents the functional characteristics associated with the interactions between a parent and his or her children in the context of intentionally participating in, prompting, discussing, and/or providing activity-related opportunities” (Beets et al., 2010, p. 624). More specifically, parental support has been previously defined as providing encouragement, driving the child to PA events (e.g. the swimming pool), watching children participate in activities, and engaging with children in PA (Beets et al., 2006; Trost & Loprinzi, 2011; Welk et al., 2003). It has been found that boys receive more encouragement to be active than girls (Gustafson & Rhodes, 2006).

Parents' attitudes towards the value of physical activity, parents' physical activity and parent's support toward and active way of life (Sallis et al., 2010; Trost et al., 2003) are important correlates of children's PA levels. Similar to previous studies (Gustafson & Rhodes, 2006; Van Der Horst et al., 2007), Wilk et al., (2018) showed that parental support for PA functions as a mediating factor that influences children's attitudes, and is associated with children's PA as well. The findings of this study demonstrate the importance of parental support for children's perceptions and actual PA behaviours. Parents are one of the primary providers of opportunities to be active, and therefore, have the potential to increase the activity levels of their children (Beets et al., 2010).

Parental PA is another modifiable determinant of activity-related behaviours among children, and studies have shown that the level of preschool children's physical

activity reflects that of their parents (Cools et al., 2011; Dowda et al., 2011; Oliver, Schofield & Schluter, 2010). Parental MVPA levels show a significant association with total physical activity (TPA) levels in preschool children, although this association weakens as the child gets older. Children with two active parents are 5.8 times more likely to be active than are children with two inactive parents (Oliver et al., 2010).

There may be several mechanisms underpinning parental impact such as parents and children engaging in activities together, parents setting examples and standards through role modelling, and providing home environments that either facilitate or prevent behaviours such as active play or TV viewing (Gustafson & Rhodes, 2006). Cools et al. (2011) showed that parents influence their preschool children's physical activity by acting as role models or playmates, emphasizing the importance of physical activity, and setting goals for sports skills. Lindsay et al. (2006) investigated evidences on the importance of parents helping their children to develop healthy eating and physical activity behaviors throughout various developmental stages such as infancy, preschool, and school age. They found that parents play a critical role at home and are essential in preventing childhood overweight and obesity, as they should focus on understanding their role in the child's dietary habits, physical activity and sedentary behaviors.

8.3 PARENT'S BRIEFING FOR THE CHILD'S PHYSICAL ACTIVITY PROFILE

Because parental support plays an important role in children's engagement in physical activity (Welk, 1999), addressing parental beliefs and perceptions about their child's physical activity is a fertile ground for designing interventions (Rhodes et al., 2013). As theoretical models of health behavior analyse, if people do not recognize a specific behavior as problematic, they are unlikely to try and change this behavior (Faulkner et al., 2014). In order for parents to facilitate their child's access to more physical activity opportunities, they need to be aware of whether their child is sufficiently active or not.

Research demonstrates that majority of parents overestimate the physical activity of their children. In the UK, it was found that 80% of parents whose children were inactive, as measured by accelerometers, overestimated their children's physical activity levels (Corder et al., 2010). Corder and colleagues reported that on the

majority of days, parents overestimated their children's physical activity when they were actually inactive (not achieving physical activity guidelines). Notably, parent overestimation was higher for parents who reported more parent support for child physical activity. These authors suggest the burden of providing support (eg, transportation to and from physical activity events), may lead parents to assume their child is sufficiently active. Perhaps reflecting an effort justification effect (Festinger, 1957), the high effort exerted in providing support alleviates potential concerns that one's child may be inactive. In Canada, Colley et al (2012) compared parent-reported and directly measured MVPA levels in children and found a large disparity between these two measures with parents reporting, on average, forty minutes more than was measured by accelerometer. A systematic review of differences in reported versus directly measured child physical activity found a consistent pattern of over-estimation of activity through parental report (Adamo et al., 2009).

Thus, parents' poor recognition of their children's PA levels could be an important barrier to behaviour change (Van Sluijs et al., 2007). This fact could be one explanation for the limited effectiveness of physical activity interventions. This misperception is especially common for complex behaviors such as physical activity for which thresholds between healthy and unhealthy behaviors may be unclear. This may result in parents who over-estimate their children physical activity level seeing no need to alter their behavior as they are not aware that it is insufficient. Parents may also link specific health benefits to physical activity, for example, believing physical activity to only be necessary for weight loss, although there is evidence that physical activity contributes to health beyond weight control. Improving physical activity awareness may be a crucial component of interventions to increase physical activity, although few interventions take this into account (Bentley et al., 2012).

However, we do not currently know how parents assess their child's PA. In addition, parents' perceived barriers to PA have been consistently negatively associated with child PA (Sallis et al., 2000) and may be important issues to address within the content of an intervention. Reported parental barriers have included lack of time (Mitchell et al., 2011), monetary cost (Smith, 2005), lack of opportunities to be active (Smith, 2005), the local environment, safety concerns, increasing distances between homes and school, home distractions and peer pressure for sedentary activities (e.g. screen-viewing) (Hesketh et al., 2005).

In conclusion, parents strongly influence the PA of their children, and have primary responsibility for their participation in PA promotion. (6) Involving parents in their children healthy behavior, is promising, as the preschool children spends most of their time at the home environment (Birch & Davison, 2001), which is an important place for the development of healthy behaviours. In order to encourage young children to be physically active the parents should be aware of their PA level and of the benefits of the physical activity and the standards applicable to the relevant age.

8.4 RECOMMENDATIONS AND PRACTICAL STRATEGIES

Understanding the crucial role parents have on their children's PA level, help educators to work with them in order to construct effective ways of communication, and accept that this work carried out is a kind of pedagogical partnership.

- Getting parents involved in many different ways helps building bonds between the child's home life setting and the ECEC services. This can contribute to the child's wellbeing, its sense of belonging somewhere and make him or her feel safe.
- Parents can get familiar with the ECEC setting and express their opinion on how their children are being cared for or supported while growing up. They can also feel they receive support from the educators.
- Educators can learn a lot from the parents about the children they work with every day. They can learn what the children's home life is like and what the parents consider as important in raising their children.

The communication with parents can be formal, with the more structural way of working, or informal, and can be direct or indirect. The positive outcome of this communication depends on the attitude and the actual will to see parent's involvement as something positive:

- Being authentic and respectful. For example, don't ask for parents' opinions if you won't take them into account or if you don't explain to them why some of their suggestions or ideas are impossible.
- Invite parents to get engaged in issues that they are interested in or activities to which they can give added value. Different levels of involvement and different methods should be used in different contexts. This way, all parents can get involved in one way or another and no one will feel excluded.

- Be open and transparent about how your curriculum and the organized PA activities are managed, which the pedagogical aims are, and why certain choices have been made.
- Inform parents about the actual level of their children's PA and their behavior during the structured and the unstructured PA activities.
- Discuss with them during pre-organized meetings
- Make parents feel welcome and show them that you care about their feelings, routines, culture.
- Parent participation is not an ad hoc activity. It must be embedded in an open and participatory climate within the preschools and among the educators.

LITERATURE

- Adamo, KB., Prince, SA., Tricco, AC., Connor-Gorber, S. & Tremblay, MS. (2009) A comparison of indirect vs. direct measures for assessing physical activity in the pediatric population: a systematic review. *International Journal of Pediatric Obesity*, 4(1), 22-27.
- Beets, M.W., Cardinal, B.J. & Alderman, B.L. (2010). Parental social support and the physical activity-related behaviors of youth: a review. *Health Education Behaviour*, 37(5), 621–644.
- Bentley, GF., Goodred, J., Jago, R., Sebire, S., Lucas, P., Fox, K., Stewart-Brown, S. & Turner, K. (2012). Parents' views on child physical activity and their implications for physical activity parenting interventions: a qualitative study. *BMC Pediatrics*, 12 :180, doi: 10.1186/1471-2431-12-180.
- Birch, L.L., & Davison, K.K. (2001). Family environmental factors influencing the developing behavioral controls of food intake and childhood overweight. *Pediatric Clinics of North America*, 48 (4), 893-907.
- Colley, RC., Wong, SL., Garriguet, D., Janssen, I., Connor-Gorber, S. & Tremblay, MS.,(2012). Physical activity, sedentary behaviour and sleep in Canadian children: Parent-reported versus direct measures and relative associations with health risk. *Health Reports / Statistics Canada, Canadian Centre for Health Information*, 23(2), 45-52.
- Corder, K., Van Sluijs, EMF., McMinn, AM., Ekulund, U., Cassidy, A. & Griffin, SJ. (2010) Perception versus reality: awareness of physical activity levels of British children. *American Journal of Preventive Medicine*, 38(1), 1-8.
- Cools, W., De Martelaer, K., Samaey, C. & Andries, C. (2011). Fundamental movement skill performance of preschool children in relation to family context. *Journal of Sports Sciences*, 29(7), 649-660.
- Desforges, C. & A. Abouchaar (2003). *The Impact of Parental Involvement, Parental Support and Family Education on Pupil Achievement and Adjustment: A Literature Review*, London: Department of Education and Skills.
- Dowda, M., Pfeiffer, KA., Brown, WH., Mitchell, JA., Byun, W. & Pate, RR. (2011). Parental and environmental correlates of physical activity of children attending preschool. *Archives of Pediatrics and Adolescent Medicine*, 165(10), 939-944.
- European Commission/EACEA/Eurydice (2016). *Structural Indicators for Monitoring Education and Training Systems in Europe – 2016*. Eurydice Background Report to the Education and Training Monitor 2016. Eurydice Report. Luxembourg: Publications Office of the European Union.
- Festinger L. *Cognitive dissonance*. Stanford, CA: Stanford University Press; 1957.

- Faulkner, G., Solomon, V., Berry, T., Deshpande, S. & Latimer-Cheung, AE. (2014). Examining the Potential Disconnect Between Parents' Perceptions and Reality Regarding the Physical Activity Levels of Their Children. *Journal of Applied Research on Children: Informing Policy for Children at Risk*, 5 (1), article 9.
- Goodall, J., & Vorhaus, J. (2011). *Review of Best Practice in Parental Engagement*. Department for Education, UK.
- Gustafson, S.L. & Rhodes, R.E. (2006). Parental correlates of physical activity in children and early adolescents. *Sports Medicine*, 36 (1), 79–97.
- Hesketh, K., Waters, E., Green, J., Salmon, L. & Williams, J. (2005). Healthy eating, activity and obesity prevention: a qualitative study of parent and child perceptions in Australia. *Health Promotion International*, 20 (1), 19–26.
- Lindsay, AC., Sussner, KM., Kim, J. & Gortmaker, S. (2006). The role of parents in preventing childhood obesity. *Future Child*, 16(1), 169-186.
- Maatta, S., Ray, C. & Roos, E. (2013). Associations of parental influence and 10–11-year-old children's physical activity: are they mediated by children's perceived competence and attraction to physical activity? *Scandinavian Journal of Public Health*, 42 (1), 45–51.
- Mitchell, J., Skouteris, H., McCabe, M., Ricciardelli, LA., Milgrom, J., Baur, LA., Fuller-Tyszkiewicz, M. & Dwyer, G. (2011). Physical activity in young children: a systematic review of parental influences. *Early Child Development and Care*, 82 (11), 1–27.
- Oliver, M., Schofield, GM. & Schluter, PJ. (2010). Parent influences on preschoolers' objectively assessed physical activity. *Journal of Science and Medicine in Sport*, 13(4), 403-409.
- Peters, M., Seeds, K., Goldstein, A. & Coleman, N. (2007). "Parental Involvement in Children's Education 2007." London: Department for Children, Schools and Families.
- Rhodes, RE., Berry, T., Craig, CL., Faulkner, G., Latimer-Cheung, A., Spence, JC. & Tremblay, MS. (2013). Understanding parental support of child physical activity behavior. *American Journal of Health Behavior*, 37(4), 469-477.
- Sallis, JF., Prochaska, JJ. & Taylor, WC. (2000). A review of correlates of physical activity of children and adolescents. *Medicine and Science in Sports & Exercise*, 32(5), 963–975.
- Smith, B.J., Grunseit, A., Hardy, L.L., King, L., Wolfenden, L. & Milat, A. (2010). Parental influences on child physical activity and screen viewing time: a population based study. *BMC Public Health* 10, 593. Doi: 10.1186/1471-2458-10-593.
- Smith, M. (2005). Parental influences on the physical activity behaviour of children of various ethnic backgrounds. *Research Quarterly for Exercise and Sport*, 76 (1), 50–51.
- Tandon, P., Grow, H.M., Couch, S., Glanz, K., Sallis, J.F., Frank, L.D. & Saelens, B.E. (2014). Physical and social home environment in relation to children's overall and homebased physical activity and sedentary time. *Preventive Medicine*, 66, 39–44.
- Trost, SG. & Loprinzi, PD. (2011). Parental influences on physical activity behavior in children and adolescents: a brief review. *American Journal of Lifestyle Medicine*, 5 (2), 171–181.
- Trost, SG., Sallis, JF., Pate, RR., Freedson, PS., Taylor, WC. & Dowda, M. (2003). Evaluating a model of parental influence on youth physical activity. *American Journal of Preventive Medicine*, 25(4), 277–282.
- Van Der Horst, K., Paw, M.J.C.A., Twisk, J.W.R. & Van Mechelen, W. (2007). A brief review on correlates of physical activity and sedentariness in youth. *Medicine and Science in Sports and Exercise*, 39 (8), 1241–1250.
- Van Sluijs, EMF., Griffin, SJ. & Van Poppel, MNM. (2007). A cross-sectional study of awareness of physical activity: associations with personal, behavioral and psychosocial factors, *International Journal of Behavioral Nutrition and Physical Activity*, 4(53).
- Welk, GJ. (1999). The youth physical activity promotion model: A conceptual bridge between theory and practice. *Quest*, 51, 5-23.
- Welk, G.J., Wood, K. & Morss, G. (2003). Parental influences on physical activity in children: an exploration of potential mechanisms. *Pediatric Exercise Science*, 15 (1), 19–33.

Wilka,P., Clark, A., Maltbya, A., Tuckerf, P. & Gillilanda, JA. (2010). Exploring the effect of parental influence on children's physical activity: The mediating role of children's perceptions of parental support. *Preventive Medicine, 106*, 79 – 85.