

Building a repertoire: exploring the role of active play in improving physical literacy in children

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Abstract: A physically literate individual is motivated to realise fully their own movement potential and to take part in physical activities throughout their life. This study explores the relationship between play and physical literacy and aims to gain a critical understanding of the role of active play in promoting physical literacy from children's perspectives. Children aged 10-11 used disposable cameras to record their "play spaces" which allowed them to later reflect on their play experiences. The findings suggest that semi-structured (such as traditional playground games) and unstructured play activities could have a positive relationship on physical literacy.

Key words: Physical literacy. Active play. Participatory research.

CONSTRUYENDO UN REPERTORIO: EXPLORANDO EL ROL DEL JUEGO ACTIVO EN EL DESARROLLO DE ALFABETIZACIÓN FÍSICA EN LOS NIÑOS

Resumen: Una persona que es físicamente alfabetizada es motivada para desarrollar plenamente su potencial movimiento y participar en actividades físicas a lo largo de toda su vida. Esta investigación, explorando la relación entre el juego y la alfabetización física, busca una comprensión crítica del rol del juego activo en la promoción de alfabetización física desde una perspectiva de los niños. Niños de 10-11 años utilizaron cámaras desechables para registrar sus "espacios de juego" y más adelante reflexionar sobre sus experiencias de juego. Los temas que surgieron indican que actividades de juego semi-estructurados (por ejemplo, juegos tradicionales) y no estructurados podrían tener una relación positiva en la alfabetización física.

Palabras clave: Alfabetización física. Juego activo. Investigación participativa.

INTRODUCTION

Enhancing physical activity levels in the population is both a national and international public health priority. The World Health

Organization (WHO, 2010, p. 7)) affirms that: "physical inactivity is now identified as the fourth leading risk factor for global mortality".

Drawing on the results of the participatory research project reported below, this paper



discusses the role that active play could have in improving physical literacy in children. In the first part it is argued that in order to maintain a physically active lifestyle focused on a holistic and balanced development of the individual, the cognitive, social and emotional domains as well as the physical should be considered.

In the second part the concept of physical literacy is examined. A case is made for its relevance in motivating people to a lifelong positive attitude towards physical activity and its relationship with active play. In the third part the research project and its results are presented; followed by final considerations on the role which active play could have in improving physical literacy and the importance of involving children in research on matters which affect their life.

PROMOTING PHYSICALLY ACTIVE LIFESTYLES

Research shows that regular participation in physical activity is a constituent in the primary and secondary prevention of diverse chronic diseases (WARBURTON, NICOL and BREDIN, 2006). National and international guidelines, as well as main trends of studies, are focused predominantly on the frequency and physiological intensity of physical activity, while a limited amount of literature considers the quality of physical activity from a coordinative perspective and the benefits accrued (GARBER, 2011). Recommended levels for children and adolescents of “at least 60 minutes of moderate-to vigorous-intensity physical activity daily” (WHO, 2010, p. 7) relate only to the quantity and intensity. Neither the quality of physical activity, the range of motor skills, nor the types of coordination are considered.

Garber (2011, p.1345) affirms that, from activities that incorporate motor skills, “there may be benefit, especially if participating in physical activities requiring agility, balance, and other motor skills”. Perceived motor competence is a positive correlate when participating in physical activity. Research has found that the acquisition and development of motor skills during the primary school years has a significant impact on adolescents' physical activity (BARNETT, 2009). During childhood it is fundamental to “build a sufficiently diverse motor repertoire that will allow

for later learning of adaptive, skilled actions that can be flexibly tailored to different and specific movement contexts” (CLARK; METCALFE, 2002, p.176). If children cannot jump, run, throw or catch competently, they will have limited opportunities for participation in physical activities later in their lives. This is supported by Stodden, Langendorfer and Roberton (2009) whose research suggests that developing fundamental motor skills may increase the participation in a variety of physical activities during adolescence and adulthood.

Fundamental motor skills consist of locomotor skills and object control skills and form the foundation for future movement and physical activity. Although Hirtz and Starosta (2002) consider that learning and developing motor skills is a lifelong process, primary school age is regarded as the optimum period of life to improve, particularly with regard to coordination and speed.

In order to establish lifelong physically active behaviour, it is important to consider the motivation that is derived from the sheer pleasure of physical activity for its own sake, joy that comes from the body's movement. Enjoyment, positive self-perception, intrinsic motivation and perceived competence (especially in a non-competitive environment) have been found as positive correlates in physical activity participation in both adolescent girls and young children (children of both sexes under 8 years old) (National Institute for Health and Clinical Excellence - NICE, 2007). While competition in traditional team sports, a lack of confidence, a feeling of poor performance in comparison with peers and a dislike of physical activities which focus on technique and performance (rather than being fun-orientated), are all negative correlates for these two social groups (NICE, 2007). Thus, during childhood, in order to maintain a physically active lifestyle, physical activities should be fun and not limited to traditional competitive sports. In addition, they should be characterised by a high variety of stimuli which require different responses from a coordinative perspective. A broad base of physical competence is a requisite for building physical literacy (WHITEHEAD, 2010a).

PHYSICAL LITERACY AND ACTIVE PLAY

Physical literacy is defined as “the motivation,



confidence, physical competence, knowledge and understanding to maintain physical activity throughout the lifecourse" (WHITEHEAD, 2010b, p. 11-12) and is appropriate to each individual's capacity for movement. For this reason, everyone can achieve physical literacy since it is considered a potential that everyone possesses at their own level and it is not related to a defined period of life (WHITEHEAD, 2010b).

Physical literacy is linked to approaches to physical activity and education in which the child is at the centre of the learning process. A physically literate individual has a secure sense of self, which will sustain positive self-esteem and self-confidence; they have a positive attitude which motivates the individual to engage in a great number of different physical activities. They are able to perceive and read different aspects of the environment, predict movement needs, respond rapidly and appropriately with intelligence and imagination, and moving with coordination and control of the body in a wide range of gross motor as well as fine motor activities. Greater control of the body shows a flowing self-expression which, in turn, tends to improve non-verbal communication and empathetic interaction with others. They are also competent in considering and critically evaluating their movement experiences, able to understand the importance of physical activity, to involve and promote participation and to talk about these topics with others (WHITEHEAD, 2010b). All these attributes are interrelated and the improvement of one of these leads to the advancement of the others and are considered in the holistic dimension of an individual.

Physical activities that require perception of the situation, intentional adjustments, choices and decisions for action could be considered a good framework for developing these attributes. The employment of movements such as running, jumping, catching, and throwing as well as smiling or pointing in a wide range of different environments, gives the individual the possibility to enhance their movement vocabulary. This comprises all the different movements that are possible. The amplitude of the movement vocabulary lets the individual recognise patterns of conditions and answer them appropriately. It is important in order to develop motor skills to engage individuals in motor problem solving tasks

that emphasise exploration and discovery (PESCE, 2002). Activities which are varied in the internal parameters of the movement (e.g. start position, end position, movement speed), and activities where the variations are focused on the external conditions (e.g. with reduced vision, after a vestibular stress, with additional tasks), are aligned to characteristics of play.

Play is defined as:

a process that is freely chosen personally directed and intrinsically motivated. That is, children and young people determine and control the content and intent of their play, by following their own instincts, ideas and interests, in their own way for their own reasons (Playwork Principles Scrutiny Group, 2005).

It is an activity which is voluntary and free, symbolic, pleasurable, it follows continual transformation, involves active engagement, and is rule governed but where the rules could be modified by the player/s.

Through active play, participants enhance their movement vocabulary, developing patterns of movement, achieving psychomotorial competence and acquiring a positive attitude towards movement (MAUDE, 2001). Players improve their ability to explore the environment, looking for affordances, the possibilities that arise from the active interaction between the environment and the individual (GIBSON, 1979). During play individuals can express themselves freely in a creative, original and imaginative way, building their self esteem in a participatory and enjoyable environment.

MATERIALS AND METHODS

The purpose of this qualitative research project was to gain a critical understanding of the role of active play in promoting physical literacy from a child's perspective. The research had a case study design and was set in a community primary school in a rural part of Gloucestershire, UK. The school provides two hours of PE lessons per week and it is part of the local School Sports Partnership, a programme which provides instructors and equipment to promote physical education.

The participants of the project were all



children in their final year of primary school (4 boys and 3 girls aged 10-11). After obtaining the necessary consents and following a detailed information session, each child received their own disposable camera with which to create their “play diary”.

Through the photo elicitation and focus groups qualitative data were collected. The research project was exploratory and as such, conversation was within an unstructured free narrative approach and in a simply structured context, the children together with the researcher organised the structure of the photo elicitation sessions. First of all, they saw all their photos. Then, it was decided that everybody had to be present during the discussion and had the chance to ask questions to their peers. During the session, each child in turn had their photos spread out and they had the option to choose the first photo to talk about. The second photo was chosen by the researcher, and then it continued alternately.

All the photos combined with the photo-elicitation discussions create a narrative; every photo had a story behind it. Through the processes of “narrative analysis”, an analysis of the data was undertaken to identify emergent themes (RIESSMAN, 2005).

RESULT AND DISCUSSION

Semi-structured play activities, such as traditional playground games (tag, hide and seek, etc.) and unstructured play activities were popular amongst the participants. The children considered active play as a fun activity that should be new, challenging, and inclusive: “play should be with friends all having a great time”. They considered that one of differences between play and sport lies in the importance of being in charge of the activity. One of the girls said that: “when you do sport you do in a club. You have been told what you have to do, while when you're doing your own game you're doing whatever you wanted”.

One of the boys considered that the difference between play and sport is in the rules that come from outside and not changeable: “when you play football they have a set of rules, like you cannot pick the ball up in front of it and try to score a goal”. This is also one of the features of traditional playground games. Even though

they, like sports, are rule governed, in this kind of game the rules can be modified. The children themselves make the changes according to different conditions such as the players' abilities, time and the environment (surface, space and area). One girl said “you can add new rules. It's like people use new rules in a different way because it's like your own game”. And another added: “it makes you feel good because the game you invented got success”. The possibility of changing and adapting rules putting the children at the centre of the decision-making process, gives them an active role in managing the flow of the activity. In this way, to make the activity work they create the conditions of the game together. Unlike the majority of the other activities in which they are involved (school, family, sport groups) in which decisions, situations and relationships are defined by adults, during play children manage all the unexpected situations or conflicts that can arise. They understand that they must negotiate rules in order to play. This kind of activity gives them the opportunity to learn to communicate their ideas, to listen to others, and to learn how to manage and mediate conflict.

During play the child interacts, through movement, not just with the others but also with the environment, in a continuous, evolving process. The more an environment is unstructured and natural, the higher is the active role of the child in filling it with their imagination and creativity (LESTER; MAUDSLEY, 2006).

One of their favourite playing activities was in a natural environment looking for and using the different natural obstacles as affordances for trying tricks. One child noted that there “[...] is a jump we doing with the bike and every time we go we tried different jumps, see if you can just run off or see if you can jump with one wheel or if you can land on the front wheel”.



Figure 1: Bike trails in the park.

Source: De Rossi (2011).

The children thought trying new tricks was important as well as sharing the knowledge amongst friends: “you try to find different tricks to do with the bike and, if you are able [...], you teach all the others how to do it”.

Reading the affordances of the environment and reacting appropriately to them through a holistic involvement of the individual let them transform an “empty space” into a “play space”. This emerged from their narratives of play in open spaces, and the unstructured spaces photographed in the majority of the photos. For example a wall can provide different possibilities for play when a child is able to read the environment and look for affordances.



Figure 2: Garage's wall and play space.

Source: De Rossi (2011).

One of the girls said:

“This is my garage wall I kick the ball up against it if no one wants to play with me or play with a tennis ball and throw it or play with the basketball hoop. I also draw on it with chalk and use it as a target drawing circles with numbers on and get certain numbers if you hit it.”

Two of the activities that featured most in the children's photographs were the trim trail and the trampoline. One of the main attractions of those activities is the children's perception of their “malleability”, their infinite possibilities. The trim trail consists of a course with different activities mostly focused on developing balance and hand-eye and leg-eye coordination skills, giving to the individual motor problems to solve.



Figure 3: Trim trail.

Source: De Rossi (2011).

They liked it “because it's fun, you can do lots of things on there, and you don't get bored because you can play in all different ways. You don't have to do the same each time”. Using the same material in a different way: “there are logs and you crawl under the logs”; making it more difficult by the intervention of the other players: “someone is in there we swing around they have to hang on and jump off”; testing your level: “a friend has a stopwatch we see how fast we can go”; or experimenting new skills: “when someone does it in a different way it looks quite fun and you try to copy it”. A trampoline also gives them the possibility to play every time in a different way. They tend to play it in the “conventional” way, bouncing and trying skills, like turns, when they are alone. When they are with siblings or friends, they use the trampoline in “unconventional”



ways, creating new games and activities: “when my friends are over we put the football, rugby ball, tennis balls cricket balls and whatever and we put inside in the middle of the trampoline”, “you have to jump and then dodge the balls coming towards you”. Using the trampoline in “unconventional” ways they apply, adapt and coordinate motor skills in a constant interaction with different situations.

Without exception, all of the participants described the enjoyment to play traditional playground games. This type of game is played for the intrinsic pleasure of playing, expensive equipment is not required and the game can be played in any place and at any time. They attract the children for their challenging nature. Some of the children's narratives about the best play time they could recall involved this kind of game. They highlighted the idea that in order to succeed in one of these games, it is not just important to have physical competence. In a holistic approach the interaction amongst the whole individual domains is fundamental, with also positive repercussions on the self-esteem. One of the boys commented on one of his best experiences:

[...] we usually play this game where you have a base and someone on it and no places is not allowed so we played in a big estate and you have to like trying to get back to the base without getting tagged; and because the people I played with, they were older and faster, so you got to really think what to do and how to get there.

And one of the girls added: “[...] and when you succeed you feel ecstatic.”

Traditional games give the participants endless motor problems that must be solved. This kind of game seems to help in acquiring the third and higher phase of movement's coordination, the one of refined coordination and variable receptiveness, where any skills must be adapted to the different conditions (MEINEL; SCHNABEL, 1984). The same ability required to succeed in any kind of team sports and also individual sports, such as fencing, tennis, judo. By providing a broad and wide range of different situations, traditional playground games help to develop “motor creativity” in order to solve problems in a creative and divergent manner. When children play traditional playground games they develop their non

verbal skill, body signals to create an understanding with team mates or for example in any kind of tag games, in dodging in order to deceive the catcher. The development of these characteristics: motor competences, active interaction and ability to read the environment, non-verbal communication and empathic relationship with the others, holistic engagement of all the domains of the individual (physical, cognitive, emotional and social) and the possibility to solve motor problems through personal and individual sequence of movements, leads towards the development of a physically literate individual.

CONSIDERATIONS

The results of this project show that free, unstructured and semi structured (traditional playground games) play could encourage the development of physical literacy. Children like to act in a situation that is already known to them, they are motivated to engage in active play activities where they can show their coordination and ability. In a known environment it is possible to add variations that, especially when they are the product of their own action, give children intrinsic motivation to move, play and learn more. In this perspective play in a natural environment is highly significant. Here, through experiences of play they can interact with the affordances of the environment. Through an action of perception and estimation of the affordances from the environment they learn to react to them with movements that are coordinated, controlled, intelligent, emphatic, creative and appropriate for the individual in the different conditions.

Individuals, who enjoy exploring, playing and expressing themselves with movement, value their bodies as an avenue to interact with the others and the environment. Through positive experiences they will enhance their self-esteem and self-confidence, increasing their motivation to participate in active play activities. This study reveals the important role that child-driven play can have on the continuous development of the individual's potential in a holistic form. Through active play, all the different domains of human being (physical, cognitive, emotional, and social) are involved (MATTHEWS *et al.*, 2011). The body, with its infinite potential of movement, and the



mind, with its plasticity, are the actors in the active and continuous process of interaction with the environment. This is an interaction which produces continuous change both in the individual and the environment.

The significant place traditional playground games occupy in children's lives emerges from their narratives, as well as the implications that taking part in these kinds of activities can have on the development of physical literacy. Traditional playground games are played for the intrinsic pleasure that playing these kinds of games can give. They seem repetitive, but the same game would never be exactly the same because the players will be internally different (and will have a bit more play experience) and the game more complex. These games are competitive without giving too much importance to the results; the main goal at the end of these activities seems not to be in winning but to immediately starting another round. Since they are games that were also played by parents and grandparents it could be a way to create stronger bonds between generations and at the same time improve the physical activity of all family members. Moreover traditional playground games, common in every part of the world, could bring an idea of closeness with other cultures and populations.

Activities that create motor problems to solve and traditional playground games could be part of a PE curriculum aimed at improving physical literacy, which puts the holistic education of every child's potential as a core objective. The role of the PE teacher is important in creating an environment where every student's holistic potential, timing of development and learning is respected as well as valued; where a 'mistake' has its own value being a different way to construct their own experience (MAZZONI, DE ROSSI AND ALBANESE, 2010); where the child is the main actor of their own motor experiences and the adult is in the background.

FURTHER RESEARCH

It is important that future research should examine in detail the combined influence of play in natural environments and playing traditional playground games upon the improvement of physical literacy in primary school age children, in school and out of school settings (playrangers, play

centres). There is also a need for more long term, longitudinal research examining the links between active play and physical literacy, particularly with regard to the active interaction with the environment and the ability to respond effectively to it, and the improvement of fundamental motor skills and if and how the motor skills learned through play in natural environments and playing traditional playground games could be transferred to sports activities.

A final recommendation, which comes directly from the participants, regards the importance of involving children more in research projects in matters that affect their own lives. The value of giving greater consideration to children's experiences, perceptions and ideas is evident from this research project. This may not be possible in all situations, but this project showed young people appreciate and respond more positively where informal relationships exist. This project demonstrates that children are able to collect and describe meaningful data about their life experiences. They want to be taken seriously by adults and be recognised as experts in their lives. As one participant explained, "we know what 11 year olds are like and we know what they like". When the children have the opportunity to express their ideas and opinions, and recount their experiences, they engage adults in considering different perspectives. It is important that adults are prepared to listen to them respectfully and seriously, without judgement. Participatory research can provide a meaningful perception of children's experiences, from their own perspective, which can be a valuable contribution to adult society's understanding of children's lives.

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