# Whatever happened to playtime?

# John Evans Deakin University

### Abstract

There has been a growing call for recess and lunch breaks to be given more structure in the form of organised games. Two reasons are typically given. One is to try to address the concern about children's lack of fitness by providing them with games designed to get them active. The other arises from concerns about children's behaviour in the playground and the belief that organised games will address this by giving them 'purposeful activities' to do. And studies have shown that interventions in the form of adult organised games can increase children's activity levels and provide significant health benefits. But to adopt this approach is to overlook some of the other advantages and opportunities recess and lunch breaks provide. This paper looks at the changes that have taken place in primary schools, those that are proposed and the consequences of going down the path of turning recess into a formal period of adult organised rule governed games.

For most children recess and lunch breaks are often the best part of the school day, certainly in the primary school years anyway. The reasons lie in what they are escaping from as much as it is what they are escaping to. It means getting out of the classroom and its associated work, routine and the constant gaze of the teacher, to the playground where teachers still supervise but at a distance and, for the most part, children get to make choices about how, where, what and with whom they play. Well at least that used to be the case. A growing body of research reveals that life is changing in the playground largely brought about by a reduction in time and the imposition of rules. For reasons which will be discussed in the paper the approach now adopted by many schools is to remove, restrict and reduce play opportunities. The latest change, however, is perhaps the most radical of them all in that it undermines a fundamental principle of play - that it is activity chosen and organised by children. Before looking at the proposal to organise recess, let's first look at some of the changes already in place both here

Copyright Agency Limited (CAL) licensed copy. Further copying and Communication prohibited except on payment of fee per Copy or Communication And otherwise in accordance with the licence from CAL to ACER For more Information contact CAL on (02) 9394-7600 or info@copyright.com.au

and overseas that have led some to argue that we are seeing the decline of a very traditional and valued part of the school day.

## What are the changes?

The changes that have taken place to recess and lunch breaks in primary schools to date can be grouped into three broad categories.

1. Changes to rules: Many of the games that we might once have accepted as simply part of the active, rough and tumble life of the pre-adolescent child are now banned in schools. Typical examples are games involving tackling, wrestling and even 'tag'. The fear is that such games have an aggressive component to them and may get out of hand. A 'tag' or 'tackle' may become a push or hit which leads to retaliation and possibly a confrontation involving fighting.

Games where balls are thrown at other children, such as dodge ball and brandy are also on the banned list. The concern is not just that those playing the game may be hit but errant balls may strike other children. This is particularly an issue in schools with small playgrounds.

In schools where the playground is largely bitumen or concrete it is not uncommon for rules to exist which prohibit children from running in these areas. The possibility of collisions and abrasive injuries suffered from falling on these surfaces has led to the bans. Banning running games eliminates a raft of activities which children love to do and arguably need to do for their own health and fitness.

Children are not permitted to play in, up, under or behind trees and shrubs despite the fact that we know young children in particular love to hide, build 'cubbies' and engage in pretend and fantasy play. Apart from the safety factor (children might fall when climbing), schools are more conscious of the appearance of the playground now so children are often banned from playing near gardens to avoid damage to trees, bushes and flower beds. There is also the argument that children shouldn't be playing behind trees, shrubs or even sheds because they need to be in full view at all times if they are to be properly supervised.

Playground supervision, or 'yard duty' as it is often called, requires the teacher to be vigilant and alert for trouble and danger. Playing with children is no longer an option for one can't be playing and doing one's duty. Clipboards are carried and notes made of incidents that occur and any action taken. In some schools teachers have even taken to wearing whistles or carrying mobile phones so that they can quickly report an emergency or call for reinforcements. Such is the weight of

responsibility that the role is now described (see Evans 1997) by many teachers as more akin to 'guard duty' than 'yard duty'.

2. Changes to the physical landscape. It is quite unusual now to see equipment such as swings, flying foxes and see-saws in schools even though they are very popular with children. The accident rate arising from the use (and misuse) of this equipment was too high. Children struck by moving objects can suffer severe injuries hence the decision to remove them.

A lot of the fixed equipment, such as climbing frames and log forts, that once took pride of place in primary school playgrounds, has been removed because it fails to conform to new National Playground Safety Standards. The height of equipment, for example, now has to be within defined limits. The type and depth of under surfacing is clearly set out. Even the materials used to construct playground equipment are constantly reviewed as new information emerges about health, safety and technology. The recent concern about treated pine wood is an example. Copper chrome arsenate is a treatment used in pine to prevent damage from insects, wood rot and fungus but some concern has been raised as to the safety of it for young children given that it is widely used to build playground equipment.

Loose materials such as tyres, rope, wood, etc are no longer to be found lying around the playground. They once provided children with the opportunity to create their own play but the occasional use of them for illicit purposes meant that they had to go. And the traditional and much used sand pit is rapidly disappearing because it has been found to contain glass, animal faeces and even syringes.

3. Changes to time: The third change that has come into effect in many schools is to reduce the length of time set aside for recess and the lunch break in particular. Many of us will recall enjoying a lunch hour when we were at primary school as well as a morning and afternoon recess. In many schools the afternoon recess break is gone and the lunch hour has been reduced to 45 minutes and even less in some schools. Not so long ago the number and length of the breaks was mandated in Education Department regulations. Now one would be hard pressed to find any direction in this regard.

The school day now tends to be broken into teaching blocks with extensive time given to numeracy and literacy prior to the lunch break when, so the traditional thinking has it, children are most alert and attentive. It is not uncommon for there to be a two hour block commencing at 9.00 am followed by a half hour recess and then another one and half or two hours in class. The noonday lunch break is now often not taken until after 1.00 or even 1.30. This means that the time

left after lunch may be only one hour before school finishes at 3.15 or 3.30, hence the decision by many schools to abandon the afternoon recess.

Where once lunch time meant children leaving class and spending the hour eating and playing as they saw fit, now most schools insist on children first eating their lunch (often in a designated spot so as to reduce the litter and supervised by the class teacher to avoid disputes, and go some way toward ensuring that lunch is actually eaten) before they go out to play. So 10 minutes may be set aside for this nominally leaving 50 minutes of playtime. But this has been reduced in many schools to something in the order of 30 - 40 minutes and the main reasons are accident prevention and behaviour management. Teachers on yard duty were reporting a greater number of accidents and unruly behaviour in the latter stages of the break suggesting that maybe the break was too long, children were becoming bored and tired and were getting into trouble. Their solution was to reduce the length of time children had to play. So the last 10 and, in some cases 15, minutes of the time allowed for free play was cut. Overall this effectively means that the lunch hour is now more likely to be 45 - 50 minutes of which maybe only 30 minutes is actual playtime.

There are reports (see Pellegrini & Blatchford 2000, Pellegrini 2005) of schools in the UK and USA actually dropping (morning as well as afternoon) recess breaks altogether choosing instead to devote more time to class work and the formal curriculum. 'Embedded in the larger context of the 'effective education' debate, teachers and parents have been questioning the role of recess in the school day' (Pellegrini & Blatchford 2000, p. 59). They go on to say that those who favour dropping recess altogether argue that it takes up precious teaching time in what is already a crowded curriculum and often disrupts children's work patterns because they become so excited that subsequent attention to class work is difficult.

Interestingly many of the changes that have taken place have been largely based on intuitive and anecdotal experience. As Pellegrini (2005) points out systematic data on most aspects of this issue are limited. For example, on the matter of whether or not recess disrupts children's attention to work and ability to refocus after a break, he points to research which suggests that recess probably increases, rather than decreases children's classroom performance.

The latest proposal is to give recess and lunch breaks more structure. Rather than allow children freedom to choose what, where and with whom they play, the proposal is to organise games and activities for them. The reason is twofold. One is based around the belief that

organised activities will keep children 'occupied and out of trouble' which will mean fewer problems in the playground. The second is that the problems associated with children's health are largely due to their sedentary lifestyle so we need to find ways and means to get them more active. This idea is not new. The difference now, however, is that the intention is not just to supplement the natural free play with an organised game or two but to replace the game culture altogether. To those who believe in the importance of play and playtime this raises serious concerns.

## Organised Recess!

There is widespread concern that children are not active enough, in or out of school, and that this potentially has serious consequences for their health and wellbeing. Pressure is being placed on schools to set in place programs that will increase children's physical activity (Pill 2006). In many primary schools children may take part in formal Physical Education and Sport only once or, at best, twice a week, which is too little to have much effect on their health and well being. Finding time for more Physical Education has proved difficult, in no small part due to increasing academic demands. According to the experts daily activity is what is needed and where do children have the opportunity to be active on a daily basis? The answer is in the playground at recess and lunch times, which is why attention has turned to this domain.

In a recent edition of the Journal of Physical Education, Recreation and Dance (Vol.76, No.9, 2005), the question 'should recess be more structured and supervised in order to increase students' physical activity', was put to readers and produced some interesting and surprising responses. For example, a primary school Physical Education teacher argued that 'unstructured free time does not guide children into anything. With structure, proper supervision and choice, the students can practice the skills they have learned in physical education, increase the time they spend being physically active and have a safe and social atmosphere on the playground' (p.9). Another writer argued that 'purposeful intervention' is what is needed in order to make recess 'more meaningful to children' (p.9). Other contributors argued that, because physical education is often marginalised in the school curriculum and reduced and even eliminated in some American schools, then recess may serve as a substitute. 'If students are deprived of physical education

time, organising a few activities during recess to ensure that the students are active is a small step that can lead to big results' (p.49).

Studies (see Kraft, 1989, Sleap & Warburton 1992, 1994) that have measured the activity level of children during recess/lunch breaks have generally shown that it is quite low. Kraft (1989), for example, found that while most children were active during recess/lunch breaks only a small minority (more boys than girls) were involved in what could be described as vigorous physical activity. This led him to conclude that children do not engage in sufficient aerobic activity during recess to promote adequate fitness.

Those in favour of organising activities during recess/lunch breaks point to studies such as those by Kraft and others. They also point to research which shows that children's health and well-being is enhanced by being involved in organised activities. Following on from earlier research (Gabbard 1992, McKenzie et al 1997) Scruggs et al (2003) found that 5th grade students' physical activity levels were greater when participating in structured fitness activities conducted during recess breaks compared to the activity levels of children during normal recess breaks. So organising activities for children to do during recess lead to greater levels of activity than when they were left to their own devices. They concluded that 'manipulating the traditional recess environment demonstrates promise for increasing children's school time physical activity levels' (p. 164).

Another to argue for 'structured play', but for different reasons, is Golz (2004). He describes structured play as being 'the organization of recreational and/or competitive team games for students at lunch time and other suitable times by a teacher, Aide or Parent, under Duty Teacher supervision' (p.107). The reason given for having structured play is that it facilitates behaviour management because children learn to play within and by the rules. Too often, he argues, their 'misguided fervour' means that they play in ways that reinforce tactics that are clearly against the rules. 'You don't get the ball unless you are the biggest, fastest, push/pull hardest, trip up or hit' (p.107). The solution, he claims, is to organise games for children so they learn to play by the rules, control their aggression and understand that dangerous or inappropriate play will be penalised.

Concern about what was happening and, in some cases, not happening in the playground has prompted some schools to implement changes along the lines of structured play. Murphy et al (1983), for example, found that games intervention programs reduced playground

disputes by more than half. Lewis (1998) looked at a school where the teachers, parents and children were concerned about various forms of intimidating and anti-social behaviour occurring during lunch breaks. Teachers and parents believed that traditional games they once enjoyed when they were at school, eg marbles, hopscotch, and skipping, had disappeared and that children were all the poorer because of it. So one of the initiatives the school set in place was to organise games for children to play. The result, they claimed, was a change in the 'ethos' of the school with fewer disputes and problems in the playground. An interesting finding was that none of the games that were introduced by adults became an established part of the playground culture. When children were asked about the marble and hopscotch games, they said that they saw them as 'more to do with officially sanctioned, school activities rather than as their own play activities' (p. 50).

More recently Visser & Greenwood (2005) describe a study where they used an interventionist approach to try and ameliorate disputes which were reportedly occurring in the playground. Over a six week period they organised games for children to play. The children had the choice as to whether or not to join in. Many chose to do so. The teachers and lunch time supervisors all reported greatly improved behaviour on days when children played the organised games.

So organising activities for children to do during recess/lunch breaks may result in fewer disputes in the playground and a higher level of active engagement in games but at what cost? What are the implications of going down this path?

## What are the implications of organising recess?

Organised activities cannot without serious consequences replace free and creative play where children exercise their own initiative. (Bengtsson 1979, p. 450)

The main arguments for organising recess revolve around issues of safety, behaviour management and getting children active. There is no question that these are very important issues in schools, increasingly so in this day and age when every step and every decision has to be accountable, but to go down the path of organising activities for children to do is to ignore some important learning experiences that children gain by having some degree of freedom to make choices during recess and lunch breaks.

One of the most important, but overlooked, attributes of playtime is that it is a social setting which gives children opportunities to make friends and interact with others of the same and mixed age and gender (Blatchford 1999). And having friends has been found (Pellegrini & Blatchford 2000) to correlate strongly with children's enjoyment of and success in school. The playground at recess and lunch times is crucial in helping children develop friendships.

By organising recess schools may be denying children opportunities to manage their own play, create and invent their own games and make decisions about who, what, where and with whom they play. It is true that disputes will occur which may, at times, require teacher intervention but it is equally true that children need to be given the opportunity to learn how to get along with other children, to learn that they won't always get their own way, that compromise and accommodation are necessary if games are to be played. According to Pellegrini (2005 p.38);

In seemingly simple games with rules, children must learn how to subordinate their behaviour and wishes to the rules of the game.....furthermore they must learn to monitor the interaction for ambiguities and breakdowns of agreement and to compromise their views and wishes to the larger goal of interacting with a peer. To do this requires that individuals have a varied repertoire of social behaviours and the verbal skills to negotiate the compromise.

Games played at recess and lunch breaks aren't the only place such experiences occur but they are important. Children's lives in and out of school are becoming increasingly organised. The school playground at recess is one of the few times and places for many children when they can gather together with friends and organise their own activities, and make choices about what *they* want to do. With access to streets and parks restricted by parents concerned about (personal and traffic) safety and with backyards (for children lucky enough to have one) becoming less conducive to active play, the school takes on an even more important role as a meeting place.

The many studies that have examined what children do during recess and lunch breaks reveal a vast repertoire of active and passive games many of which are often unseen or overlooked by the casual observer. An example of this is the rich variety of clapping, singing, counting and rhyming games that children often play in quiet corners of the playground. While they may have a low active component they are significant in their contribution to social, language and cognitive skills. If our focus is only on the extent to which children engage in vigorous

active games during recess then we may well ignore what Curtis (2001) and Factor (2001) call the 'oral tradition'. This would indeed be a serious oversight because, for many children, this is what they love about recess and lunch time. It is not just a time for active games. Many children enjoy simply walking and talking; they enjoy quiet areas; they enjoy sitting and watching; they enjoy playing imaginary games and games with small objects like leaves, sticks, dirt and sand. Most of all they enjoy meeting with friends and making their own decisions as to where and what to play.

In order to find out what children actually did during recess/lunch breaks, Armitage (2001) undertook an extensive audit of 90 primary school playgrounds in the UK. His study revealed a rich variety of games and activities which led him to conclude that 'the primary school children of today can quite easily be left alone on the playground and their spontaneity will do the rest' (p. 55). Our role as adults, he argues, should be to support their play and provide an environment that caters for what they want to play rather than what we think they should play. He, like Pellegrini (2005), found that there were very few reported incidents of injury or misbehaviour in the playground but despite this, schools would invent rules and remove equipment that they feared may be a problem.

Armitage cited as an example the removal of a small stone feature (which looked a tortoise shell) that young children used as the central feature for a game they called 'tiggy round the tortoise' (the 'tortoise' was also used for other games and was a unique feature of the playground). When some 5 years later he revisited this school there were no signs of the 'tortoise'. It had been removed because the school thought it was a safety hazard despite there being no accident recorded on this feature in 25 years.

The extent to which activities that children themselves organise are different from those organised for them by adults was made clear in landmark studies by Polgar (1976) and Coakley (1980). Polgar compared the game playing behaviour of sixth grade boys in free play in the school yard at recess with that in the formal physical education lesson and found that;

The peer group context appears to develop an egalitarian and consensual model concerned with means, the adult-structured context an authoritarian and imposed model concerned with ends. (p.265)

To illustrate her point Polgar explained how, in PE, teachers made the rules, children did as they were told. By contrast, in organising their own game, children made the decisions about teams and rules on a consensual basis.

The games children chose in free play generally had fewer rules and fewer specialised roles than the games teachers supervised and children varied the rules in the process of play to suit the situation. (p.267)

In the organised games 'teachers insisted on order and often maintained it by physically restricting children's movements and speech' (p.268). As Polgar pointed out this is not to say that both contexts don't have a place but to recognise that they are very different and one cannot be seen as a substitute for the other.

Coakley (1980) compared the participation of children in organised sport programs with informally organised games and, much like Polgar, found them to offer fundamentally different experiences.

The findings clearly suggest that the patterns of experiences vary according to the context in which they occur. The motives for participation, the dynamics of the activities, the meanings assigned to experiences and the implications of the subjective experiences are different for each of the settings. (p.99)

One of the most compelling arguments to be made for preserving free play is that it provides children with the opportunity to assume roles and make decisions not otherwise available to them in organised settings such as PE, sport or the sort of lunchtime games being proposed by advocates of organised recess. As Coakley found, in sport both the action and the involvement were under adult control and the behaviour of players was strictly patterned by specialised rules and roles. 'An additional consequence of adult control and high degree of organization was the visible absence of arguments and overt displays of hostility between the players' (p.110). One of the reasons given by those (eg Golz 2004) arguing for organised recess is that adult control would ensure that children play by the rules and control their aggression.

But when Coakley looked closely at the games children were organising themselves he found little evidence of aggressive behaviour. It wasn't that disputes never arose but when they did they were dealt with quickly and efficiently. Conflict situations were not allowed to threaten the flow of the game. By having to deal with these situations 'participants gain experiences in not only anticipating and preventing arguments but they also have the opportunity to deal with differences and disagreements in a setting in which they themselves must directly

face the consequences of their solutions' (p.113). By contrast, 'in organised programs, arguments about judgements or the appropriateness of rules and procedures do not occur between players because of the universalistic applications and interpretations of norms by referees and coaches' (p.113). The importance of informal games therefore, is that they rely on the interpersonal skills of the players to maintain the game action.

## If getting children active is the goal then...

There is more than a hint of irony in the fact that proposals are being put forward to use recess and lunch breaks to organise games so as to increase children's level of activity and yet, as explained earlier, schools have introduced rules which have effectively restricted many of the active games children love to play, removed equipment they like to play on and reduced the length of their play time.

When Burke & Grosvenor (2003), for example, asked children to describe 'The School I'd Like' what emerged most strongly was the need for more equipment, more space and more objects to play with and play on. Swings, slides and merry-go-rounds are among of the most popular pieces of playground equipment and the focus for many active games yet most schools have removed them for fear of injury. Children in Burke & Grosvenor's study said that they would love to have scrap materials to play with and to be able to build things but few schools allowed this for fear of injury. It led them to conclude that many school yards are, in the main, colourless hard spaces which provide very little incentive for children to engage in active play or, in fact, play of any kind.

So if getting children active is the goal then a good start would be to reflect on the decisions that have been made concerning what children can and can't do. According to Armitage (2001 p. 55) the blame for the poor state of many playgrounds is rarely laid at the door of those who designed them in the first instance, 'but rather on the children themselves who valiantly battle to make the best of a bad job'. The possibility of a link between the reported incidents of misbehaviour in the playground and the fact that many of the rules schools have introduced have eliminated most of the active games children like to play, has been discussed elsewhere (Evans 2001).

It doesn't take much to provide a setting that encourages active play and there are many forms of intervention one can put in place other than taking control of recess and organising games for children. Stratton and Leonard (2002), for example, took a school that had no playground markings on its hard court area and proceeded, with the help of the children, to design and paint the surface with pictures of castles, snakes and ladders, hopscotch, a clock face, a pirate ship and so on. Interestingly the markings were linked to themes the children were working on in class. They then used heart rate monitors to assess the energy expenditure of the children while playing during recess. They did this before and after the markings were put down and their results showed a significant positive influence in both the intensity and duration of activity. With this simple addition to the playground children were found to engage in more active play.

In a study of a school that set about changing its playground culture, Lewis (1998) found that by confining large ball games such as soccer to specific areas of the playground, other games began to emerge. Children who were previously denied opportunities to play in open areas were now involved in imaginative play, small apparatus play and traditional games.

#### Conclusion

The perception of play as being 'useless' was the subject of an article by Brian Sutton-Smith (1975) over 30 years ago. Back then he wrote of the 'very widespread human indifference to children's play activities' (p. 198). He went on to say that 'as adults, we feel far removed from the play concerns of children, so we have additional reason to experience some annoyance when this culturally distinct phenomenon of theirs interferes with the work that must be done in educating them' (p. 198). According to Sutton-Smith and others (Factor 2001, Mercogliano 2003) we are forever trying to make play 'useful', give it purpose and order. As Factor (2001) observed, if adults believe that the games children devise themselves are trivial then it is not surprising that they will attempt to substitute activities which they consider to be of a more valued kind.

This view comes through strongly in the opinions expressed by contributors to the Journal of Physical Education, Recreation and Dance referred to earlier. "Purposeful intervention" was the comment by one of the contributors in support of the argument for organised games.

However, as the Opies (1969 p.16) reminded us quite some time ago, 'nothing extinguishes self-organised play more effectively than does action to promote it'.

Those who hold the view that play is a vital experience for children and that recess and lunch breaks are increasingly rare opportunities for them to play with minimal adult intervention argue that we should not go down the path of organised games. Nor is it defensible to claim that recess and lunchtime should be used to compensate for the lack of physical education. If it is important then schools need to examine ways in which to incorporate more physical education rather than see recess and lunch times as a suitable substitute.

If we believe it would be beneficial to encourage children to engage in active games at recess and lunchtime for the betterment of their health and fitness then a good starting point would be to reflect on the decisions which, over time, have effectively curtailed their freedom and their opportunities to play. The pressing need for safe play has given rise to rules that have effectively eliminated many of the games and activities which have elements of vigour, challenge and risk. We need to look again at this. A vibrant playground is one where there are abundant opportunities to play and where adults and children work together to create an environment in which the right to play is respected by everyone involved.

#### REFERENCES

- Should recess be more structured and supervised in order to increase students' physical activity? *Journal of Physical Education, Recreation and Dance*, Vol.76 (9), 2005, p.9 & 49.
- Armitage, M. (2001), The ins and outs of school playground play: Children's use of 'play spaces'. In J. Bishop & M. Curtis (Eds), Play Today in the Primary School Playground. Open University Press, Buckingham 37-57.
- Bengtsson, A. (1979), Children's play is more than physical education. *Prospects*, Vol.9 (4), 450-457.
- Blatchford, P. (1999), Friendships at school: The role of breaktimes. Education 3 to 13, Vol. 27 (1), 60-66.
- Burke, C. & Grosvenor, I. (2003), The school I'd Like, Routledge, London.
- Coakley, J. (1980), Play, games and sport: Developmental implications for young people. Journal of Sport Behaviour, Vol. 31 (3), 99-117.
- Curtis, M. (2001), Counting in and counting out: Who knows what in the playground. In J. Bishop & M. Curtis (Eds), *Play Today in the Primary School Playground*, Open University Press, Buckingham, 62-79.
- Evans, J. (1997), Rethinking recess: Signs of change in Australian primary schools. Education Research & Perspectives, Vol. 24 (1), 14-27.

Evans, J. (2001), In search of peaceful playgrounds, Education Research & Perspectives, Vol. 28 (1), 45-56.

Evans, J. (2003), Changes to (primary) school recess and their effect on children's physical activity: An Australian perspective. *Journal of Physical Education New Zealand*, Vol.36 (1), 53-62.

Factor, J. (2001), Three myths about children's folklore. In J. Bishop & M. Curtis (Eds), *Play Today in the Primary School Playground*. Open University Press, Buckingham, 24-36.

Gabbard, C. (1992), Enhance your elementary program with a fitness break. Journal of Physical Education, Recreation & Dance, Vol.63, p. 11-12.

Golz, B. (2004), Solutions for Behaviour Management. Harden, Sydney

Kraft, R. (1989), Behaviour of children at recess. Journal of Physical Education, Recreation & Dance, Vol.60 (4), p. 21-24.

Lewis, M. (1998), Changing a playground and its culture. *Education 3-13*, Vol.26 (3), p.47-54.

Mercogliano, C. (2003), Teaching the Restless. Beacon Press, Boston.

McKenzie, T., Sallis, J., Elder, J., Berry, C., Hoy, P., Nader, P., Zive, M. & Broyles, S. (1997), Physical activity levels and prompts in young children at recess: A two-year study of a bi-ethnic sample. Research Quarterly for Exercise & Sport, Vol.68, p.195-202.

Murphy, H., Hutchinson, J. & Bailey, J. (1983), Behavioural school psychology goes outdoors: The effect of organised games on playground aggression. *Journal of Applied Behaviour Analysis*, Vol.16 (1), 29-35.

Opie, I, & P. (1969), Children's Games in Street and Playground. Oxford University Press, Oxford.

Pellegrini, A. (2005), Recess: Its Role in Education and Development. Erlbaum, New Jersey.

Pellegrini, A. & Blatchford, P. (2000), The Child at School. Arnold, London.

Pill, S. (2006), Promoting physical activity and health in schools. *Professional Educator*, Vol. 5 (3), 36-41.

Polgar, S. (1976), The social context of games: Or when play is not play, Sociology of Education, Vol. 49, 265-271.

Scruggs, P, Beveridge, S. & Watson, D. (2003), Increasing children's school time physical activity using structured fitness breaks. *Pediatric Exercise Science*, Vol. 15, 156-169.

Sleap, M. & Warburton, P. (1992), Physical activity levels of 5-11 year old children in England as determined by continuous observation. Research Quarterly for Exercise & Sport, Vol. 63, p.238-245.

Sleap, M. & Warburton, P. (1994), Physical activity levels of preadolescent children in England. British Journal of Physical Education, No. 14, p. 2-6.

Stratton, G. & Leonard, J. (2002), The effects of playground markings on the energy expenditure of 5-7 year old school children, *Pediatric Exercise Science*, Vol. 14, 170-180.

Sutton-Smith, B. (1975), The useless made useful: Play as variability training. School Review, Vol. 83 (2), 197-214.

Visser, J. & Greenwood, I. (2005), The effect of playground games, as agents for changing playground ethos, on playground disputes. *Education 3-13*, Vol.33 (2), p. 27-30.