Contents

Introduction

The purpose of this literature review is to create an overall picture of the area of research conducted between 1980 – 2003 concerning children's outdoor play. Focus is primarily on the pedagogical area, and secondarily on associated fields. The material studied is primarily peer-reviewed articles in scientific journals. What are the topics that have inspired research in this area, what can we read from the results? The findings will be discussed in the context of recommendations for future research in this area.

Outdoor play is not valued as it was during the periods of the Froebel kindergartens in progressivism and in early nursery schools. Play is an instinctive form of movement. An exciting outdoor space provides an opportunity for children to explore the environment at their own individual levels of development. A creative play experience enables children to test their skills, try new ideas, and seek challenges that cannot be duplicated in other environments (Hendy, 2000).

Wellhousen (2002) points out that today the basic need to play outdoors is largely overlooked and the multitudes of opportunities to learn from the outdoor environments are underestimated. Similarly, Henniger (1994) argues that educators and administrators find classrooms and indoor activities much more important than the experiences that come from an outdoor play environment. He bases this argument on three separate findings. First, significantly less attention is given to the subject of planning outdoor playspaces than to preparing indoor spaces. Second, the curriculum for early childhood education in most countries devotes only a fraction of attention to the importance of outdoor play. Third, teachers spend considerably less planning time organizing and procuring materials for outdoors as compared to time spent planning indoor activities. Educators also give less time and attention to assessing play and learning outdoors than they do to evaluating children's indoor activities. One aspect is that outdoor activity is considered to be only recreational. Wellhousen (2002, p 153) states that "whatever the reason failing is to assess children during outdoor play it results in an unbalanced evaluation of what children can and cannot do". Blatchford (1998) found when asking children themselves in middle childhood about playtime at school and the quality of play that

they were overwhelmingly in favor of playtime and the opportunity it provided for self-directed play activities. A minority also expressed concerns about such factors as disruptive behavior and having to play outdoors in bad weather.

Bishop and Curtis (2001) say that a common perception today is that children don't know how to play anymore and the traditional games are disappearing. But they go on telling us that it is important to demonstrate that children's games are as lively and varied now as they ever were. The word "traditional" is often central and it is misleading when we talk about children's play. A critical consideration of what we mean with traditional games and children's tradition is often missing (op.cit p 9).

Hartman and Rollet (1994) also state that increasing emphasis on formal learning and highly structured curricula in elementary school have considerably reduced children's learning motivation, and not exclusively in the industrialized countries. The same phenomenon can also be observed in developing countries. The alarming aspects of this development are lack of concentration, a rise in aggressive behavior, discontent, and school absenteeism on the part of school children. Hartman and Rollet go on to tell us that in several countries classroom trends show endeavors to bring about integration of children's natural inclinations toward free play into curricula designed to further all the children's potentials – not only their intellectual capacities, but also emotional and other personality-related faculties.

International research results show that children's play is not only a source of pleasure, but that it has a bonus in that it reduces stress and enhances children's motivation to learn (Hartman & Rollet, 1994; Sutton-Smith 1988, 1990). It is of great interest to see that play activities and toy equipment play a central role in preschool curricula, although they are generally minimized in school. Outdoor play is even more minimized and falls outside aspects concerning learning through play.

Research concerning outdoor play and toy/play equipment is nearly invisible. One part that is visible is in the context of "games" and especially different kinds of ball games like soccer. On the other hand, play activities have been shown to increase with the complexity of the environment and the opportunities for play. Children's play becomes more vigorous outdoors than indoors, and group and gender constellation changes are more marked due to differences between outdoors and

indoors play activities (Fjortoft, 2000, Frost and Strickland, 1985, Wilkinson, 1980).

Play and context

Naylor (1985) points out that play does not occur ”in a vacuum”, rather it happens within a context and this context will have physical and social dimensions. Without an understanding of what that context is and of how it affects a child’s play, Naylor points out, we cannot hope to gain a full understanding of the phenomenon. Children play with something and/or someone, at a certain time and in a certain place , even in their imagination. These other factors may not have as much effect on the child’s play as will the child’s own propensities of the moment but nevertheless they will have some effect and as such should not be ignored (op.cit. p 109).

Naylor believe that player factors will be both genetically and experientially determined and may refer to motivational states as adjusted by previous experience. Play arises through the interaction of factors within the individual with those in the environment (op.cit). Naylor go on telling us that it is important to highlight that environmental factors will include the physical characteristics of playthings, the physical laws of the surroundings, and the social environment. In an interactive model of player and environment, play is seen as a behavioral system and all components must be simultaneously represented if any one of them is to be understood properly (op. cit.).

Places to play can be described as either outdoors or outdoors. The two domains differ both spatially and socially. Naylor (1985) states that for children ‘indoor’ is a private domain, and a source of physical shelter, psychic support social security but also the locus of the limiting effects of ‘family’ and ‘school’. ‘Outdoors’ is “a necessary counterbalance, an explorable public domain” providing “engagement with living systems and the prevailing culture the locus of volitional learning” (op. cit. p 111). Grahn (1991, 1992) points out the importance of parks and recreational areas and spaces for all people.

Zinger (2002) considers the playground as an informal educational setting for social learning, and he discusses the interactions that take

place between children and playground behavior. In different studies he describes playground behavior, and includes creative class activities, including role playing, that address playground behavior. Zinger came to the conclusion that the playground is a laboratory, an informal educational setting where many kinds of social learning take place. Although specific attractions and games provide the content of playground life, it is what happens when children interact that makes their playground powerful and revealing. It is in this context that children learn to involve others, develop conversational skills, and cultivate and sustain friendships. It is also where children can exchange information, ideas, jokes, gossip, and opinions (op. cit.).

Naylor (1985, p 111) points out that outdoors is always larger than indoors, providing a setting for games and play involving more people and bigger movements. It has a variety of terrains – grass for soft landings, smooth surfaces for wheels, vegetation for hiding in, and soil for digging. An important aspect that Naylor mentions is that the outdoor environment permits varied social interaction as other children and adults pass through it. It is also non-static, with seasonal changes in flora and fauna and in the weather. It is the interaction between the child and environment that is vital to the production of the final play activity. Weather and time are also important factors. There are strong seasonal variations in the use of outdoor places for play (op.cit. p 113). Children in northern parts of Europe have often to remain in the house because of adverse weather conditions, whereas in many tropical areas the outdoor environment is available all year round. Naylor states that the everyday pattern of living will also determine when children may play outdoors. Small children under school age use playgrounds during the mornings and afternoons with a break at lunchtime. After 4 P.M. there are mostly school age children and teenagers, and on weekends and during school holidays children of all ages use the playground (op. cit.).

If the child lives in a residential area, then a different range of play places are possible when compared to homes in the city. In the former, places available might be gardens, pavements, landscaped areas and wild places; in the latter, streets, car parks, shopping areas and parks could be used. This will affect the range of possible play activities for the children from the different areas (op. cit.).

The concept of “home range” is useful in understanding how standard child factors such as age and sex affect a child’s opportunity to use the outdoor environment. A consideration of a child’s home range together with the environmental constraints will give a good picture of the opportunities available to a given child in a given setting. In the concept of home range Naylor (1985) talks about territorial range and says that a variety of outdoor places will be used. It embraces the totality of a child’s space-time domain of familiar places close to home as well as a constantly expanding boundary. According to Naylor home range is a dynamic phenomenon that develops and extends as the child interacts with its environment. The child seeks to extend its range in order to encompass new destinations. Range extension is also a discontinuous process, showing large increases with events such as starting school or riding a bike. Natural places within the home range are a prime source of variety and change (op. cit.).

Betsy (2001) states that the goal of good playground design is to create a space where children can explore themselves and their world with as few rules and as little adult intervention as possible. She quotes an old saying about good developmental education, one that also applies to playgrounds: “Provide freedom with a fence around it”.

The relation of age to home range is another important aspect and an interesting phenomenon, according to Naylor (1985). We know that younger children have smaller home ranges than older ones. Gender and home range are also mentioned. Naylor referrs to a an American study by Coates and Bussard (1974) that found that for younger children up to five years old the restrictions on home range were comparable between the sexes but, with six- to nine-year-olds the boys had a larger home range. The result show that nearly all the girls’ friends lived within the same home area, whereas the boys’ friends were spread further afield. Boys used unknown areas more than girls did, and girls were chaperoned to more places than were boys. For ten- to twelve-year-olds the trends continued with girls having to use safer areas such as playgrounds for play whereas boys went more often to wild areas and other “risky” places (Naylor 1985, p 115).

A study by Grahn et al. (1997) is a contribution to describing the impact of different outdoor environments on children’s learning and development. The study reported that children playing in an outdoor

playground including natural environments scored better on motor fitness tests and concentration abilities and had less absence due to illness than children in an urban kindergarten with a designed outdoor playground in the backyard. It is also of interest that the UN Convention on the Rights of the Child has strengthened the position of children in society, and raised expectations that architects shall meet these legislated requirements by updating their knowledge base of planning for children and the environment (Wilhjelm, 2002).

The aim of Wilhjelm's (2002) study was to illuminate those parts of a traditional architect's practice that could be revised if children's narratives are to be accommodated. It requires a change in architects' and planners' attitudes towards children's narratives on their outdoor environment. The hypothesis is that there are discrepancies and coincidences between children's environmental descriptions and those of architects, landscape architects, and planners. It is expected that these discrepancies and coincidences will explain how architects develop and design their projects.

It is interesting to introduce Wilhjelm's study in the beginning of this review because it reflects a more holistic perspective on children's play environments. The empirical material in Wilhjelm's study is based on the narratives of 38 children from Norway, 9 through 13 years old, and on interviews with three landscape architects, two planners, and three architects. The data materials include recorded interviews, inquiries, maps, and a large number of photographs, taken and subtitled by the children. The analysis was done from a hermeneutic perspective. Wilhjelm states that a new paradigm in child research guides his search for a position where children and childhood can be accepted as important categories in urban and housing studies. The discursive practices of the architects are revealed in dialogues with the researcher around children's photos.

Wilhjelm's (2002) studies illustrate how architects are guided in their understanding of reality by their normative practices. Their habitual thinking guides them to divide spaces for children in the urban environment based on functions and fixed categories. Thus the structure of their knowledge contradicts, to a certain extent, the narratives about everyday life given by the children. The children's stories about the urban environment and the green areas in the city do not conform to the

architects' interpretations. The Norwegian concept of childhood is strongly related to the use of green spaces. But it does not imply children's great appreciation of all kinds of green and open spaces in the city. The playground concept is a central issue in this project and it has a strong position in terms of significance both in the children's and in the architect's understanding. One example is traffic; it is also significant, but for architects it is related to problems to be solved, while for children it is categorized along with to the mastery of their environment (Wilhjelm 2002). Wilhjelm highlights the question of whether an architect can reconsider her/his knowledge base. The study concludes that architects are conforming rather than progressive with regard to the availability and development of outdoor environments for children in urban settings.

Fjortoft's (2000) doctoral thesis also focuses on natural landscapes as potential playscapes for children, and on the learning effects on motor development from all-round physical play in such environments. The issue is addressed through four specific parts of the topic. An overall view of the whole theme introduces how a natural environment provides a stimulating playing area for kindergarten children. It focuses on the landscape characteristics and how they afford possibilities for play. Fjortoft indicates a probable relation between landscape ecology, the children's occupation of the landscape through different forms of play, and the impact on their motor development. She also makes an analysis of a natural environment as a playground for children, showing how a natural playscape affords features for play. The natural landscape had qualities to meet the children's needs for a stimulating and varied play environment. Her study indicates a strong relation between landscape structure and play functions. Like Grahn (1997), she used the EUROFIT Motor Fitness Test.

In one of Fjortoft's studies she compared two different environments, "natural playscape" and "traditional playground". While attending kindergarten the experimental group (n=46) used a natural playscape for their outdoor play. The reference group (n=29) attended a kindergarten with a traditional outdoor playground. Both groups were tested using EUROFIT before and after the intervention period. It was noticed a better intervention effect in the experimental group. In all test items except for flexibility, the experimental group gained better results. In

comparing the experimental group and the reference group there were significant differences between the groups in co-ordination and balance abilities. It was assumed that the better results in the experimental group were caused by the intervention effect from all-round play activities in a natural environment. The overall conclusion from this study highlights the impact a natural playscape may have on children's development (Fjortoft 2000). Forencich's (2003) analysis of human fitness based on evolution also advocates more play in natural environments as a way of maintaining health. Forencich thinks that exercise like machines/sports underestimate our capacity for adaptability, problem-solving, and fun.

Another interesting aspect that Wilson, Kumer, and Knauerhase (1996) highlight is that most playgrounds for young children fail to encourage children's respect for or interaction with the natural environment. They point out that we have to focus on how to use the outdoor play area to foster an understanding and appreciation of the natural environment.

Studying outdoor play

One message that appears clearly in research concerning outdoor play is that if we want to study what children do in free play (free play in this context means that it is not structured or organized by the pedagogue), then it is useful to have a structure that will help to make observations that are meaningful to others. In other words, there is a need for a classification system acceptable to everyone in order to aid communication (Bishop & Curtis, 2001). A classification system that includes all the different kinds of play will also help demonstrate the range and variety of children's play traditions. Blatchford (1990) has tackled the problem of classification by simplifying the basic structure and categorizing the games under 24 headings. As Blatchford comments, "there are enormous difficulties involved in documenting and categorizing children's games" (Blatchford, 1990, p 169). Greenman (1993) points out that a playground evaluation instrument is needed.

Armitage (2001) did an interesting job of studying and categorizing children's outdoor play. By reviewing the information found in about 90 case studies of what actually happens on primary school playgrounds

across a large geographical area in the North of England, it was possible to begin to make sense of what one sees, states Armitage (2001). It reveals a primary school playground that is full of imagination, fantasy, and mystery, and of friendship groups. There were organized and highly structured games like quiet, reflective play as well as movement and noise. Perhaps even more remarkably, it reveals a playground divided into distinct and widely accepted places, each reserved for a specific game or form of play unique to that place, and often unique to a specific group within the school's child population.

Armitage (2001) revealed that in many areas of providing play provision for children, designers have been guilty of basing that provision on the needs of adults or on what adults feel children could and should be able to do, rather than the needs of children or what children actually do. This is especially so in providing a place to play at school, where the design of the modern school playground may provide even fewer play opportunities than those of the past. "Despite this, the result of the school play audits seems to be that the present generation of children still manages to satisfy the basic developmental needs that their bodies tell them they require, without the direct involvement of adults and in a play environment that can be unattractive, barren and seemingly devoid of play value" (op. cit. p 55).

In this literature review no study was found that defined the differences in use and appearance between a school playground, a kindergarten outdoor playground, and a playground in the community. Although Prellwitz and Tamm (1999) imply that there are three different types of playgrounds – one traditional, one modern, and one adventure playground. Of these three types of playground the traditional and modern are the most common. "The traditional playgrounds are often found close to a school, a small park, or a block of flats. They accommodate swings, slides, seesaws, sandpits, and climbing frames. This play equipment is often made of metal and iron chains and is not especially aesthetically pleasing" (op. cit. p 166).

Modern playgrounds in general contain the same equipment as the traditional ones, but are built instead of wood and have steps and suspension bridges to create different levels connecting the different pieces of play equipment. Most play equipment can be used in more than one way. These playgrounds are constructed with a strong appreciation

for color and form, and there is an emphasis on the aesthetic aspect. According to Prellwitz and Tamm (1999) adventure playgrounds have no ready-made play equipment, but there the children can build for themselves using wood and other material, and using their own imagination, sometimes under the leadership of a paid play leader. Modern playgrounds are used by both preschool and schoolchildren. Adventure playgrounds are mainly for older children. They afford freedom from the adult world, and therefore attract children in the age range of 10-12 years (Prellwitz & Tamm, 1999).

The play audits in Armitage's (2001) study have also demonstrated that different age groups within the primary school use their school grounds in very different ways and that there are surprisingly few variations between what happens at one school within a particular age group and at another. What might be even more surprising is that there is also little variation in where various forms of play may take place within the school grounds. This is true to such an extent that it is possible with a little practice to walk around a school site without the presence of children and still identify places that are used for specific forms of play. These places could be further defined as 'playspaces' and 'play features' (op. cit. p 39).

Armitage's studies also show that adults at a school sometimes designate a particular space on the playground as being for one activity, or more often for one particular group. Children themselves, however, define the whole of their available playspace into a number of accepted areas, some of which are at odds with those that have been adult-designated. The most obvious example of an accepted or designated space is that set aside for soccer. It is also the space and activity that generates the most complaints and conflicts among children and adults. Later on in this review we will examine research concerning soccer and it is clear that it tends to dominate the playground. Armitage could see that the situation differs greatly when the school playground is either U- or L-shaped, or wraps around the school buildings. It seems that the boundaries provided by the very shape of the playground and/or the presence of walls is of importance (op. cit.).

Armitage's study on the 90 play audits has provided an opportunity to make sense of what takes place on the typical primary school playground. These audits reveal a picture of an informally organized

playground and surroundings that are made up of accepted spaces and features that act as the center of particular forms of play, some of which are unique to one particular age group within the school. Armitage states that the primary school children of today can quite easily be left alone on the playground and their spontaneity will do the rest. Indeed, this already happens.

> But for them to be able to make use of this spontaneity to the best of their ability, and do so without the need for direct adult intervention in their play, the environment provided for them as a place to play must respect the finding that children themselves are informally organizing their available spaces and features to meet their own needs. As adults, our role should be to support this and provide an environment that caters for what children actually play as opposed to what they should or could play, or even what we think they play (Armitage, 2001, p 56).

Aim and method

The main purpose of this literature review was to create an overall picture of the area of research conducted between 1980 – 2003 concerning children's outdoor play. Focus is primarily on the pedagogical area, and secondarily on associated fields including psychology, social sciences and social work, anthropology, occupational therapy, sociology, and architecture. The material studied was primarily peer-reviewed articles in scientific journals.

The specific questions addressed are:

- What are the topics that have inspired research in this area?
- What methods are used?
- What can we read from the results?

Database	Descriptors	Year	Findings	Relevant findings
Libris	Lekplats	1980 -	12	4
Libris	Utelek	1980 -	6	3
Libris	Utemiljö och barn	1980 -	31	25
Libris	Skolgård	1980 -	10	7
Libris	Utomhuslek	1980 -	17	2
Libris	Playground and children	1980 -	11	6
Libris	Play and children and outdoor	1980 -	7	6
Libris	Children and outdoor playground	1980 -	1	1
Libris	Play and environment	1980 -	8	5
Total				59
Eric	Play and children and outdoor	1994	151	53
Eric	Playground and children	1993 -	952	---
Eric	Playground and children and outdoor	1993 -	40	24
Eric	Children and outdoor playground	1993 -	18	4
Eric	Play and environment	1990 -	3827	---
Eric	Out door environment and children	1990 -	89	0
Eric	Out door environment and children and play	1993 -	12	0
Eric	Play and equipment and playgrounds	1990-	62	7
Ask Eric	Play and equipment	1980	146	26
Sociological Abstracts	Playground and children	1982 -	45	20
Sociological Abstracts	Play and environment and children	1983 -	72	8
Exceptional child Education. CINAHL(R)	Playground and children	1983 -	279	8
ASSIA Applied Social Sciences	Playground and children	1989 -	6	4
ASSIA Applied Social Sciences	Play and environment and children	1989 -	36	10

The findings are discussed in the context of recommendations for future research in this area.

Method

The following literature search strategies were used to locate potential studies for inclusion. First, a computer-assisted bibliographic search was conducted from the ASSIA, CINAHL(R) Exceptional child education, Pro Quest education complete, Eric, Ask Eric, LIBRIS, and Sociological abstracts databases.

The following descriptors were used for the literature search: Toys, outdoor play and children; Toys, school playground; Play and equipment and playground; Outdoor recreation and children; Playground; Playground and children; Play and environment; Play and environment; Play and environment and children; Play and children and outdoor; Children and outdoor playground. The following descriptors were used in Swedish: Lekplats; Utelek; Utemiljö och barn; Skolgård; Utomhuslek. After further investigating the articles 86 studies met the criteria for inclusion in this literature review. Secondly, the reference lists of each study obtained were reviewed to assist in locating additional studies. Some journals tend to deal frequently with the subject in focus.

Overall study characteristics

The literature search and selection procedures identified 5680 studies, of which 181 were relevant for this purpose; of these, 86 met the final criteria for study inclusion. The studies were published between 1980 and 2003. Only a few studies were published in books and dissertations. Books and dissertations are mentioned in the beginning of the review and are not mentioned in the second table below. The main focus was on peer-reviewed articles in scientific journals. The type of intervention the studies investigated are broken down as follows in the first table below:

Criteria for study inclusion

To be included in the literature review, the studies had to meet predetermined selection criteria. In general, all studies needed to examine some of the following subjects:

- Playground
- Playground equipment
- Gender aspects on outdoor play.
- The adult's role, working and playing alongside the children (joining in with children's play).
- The rights of all children to play (children with disabilities)
- Planning and organizing the playground
- How children learn through movement, play, and sensory experience
- Social analysis of playground culture
- Bullying and victimizing

Criteria for study exclusion

Studies concerning safety and medical aspects are not included in the literature review.

Articles included in the literature review is presented in the table below.

Author(s)	Year	Title	Source	Research area
Anderson-Butcher, D., Newsome, W.S., & Nay, S.	(2003)	Social skills intervention during elementary school recess: A visual analysis.	*Children and Schools,* **25** (3) pp 135-145	Social Sciences and Medicine
Blatchford, P., Edmonds, S., & Martin, C.	(2003)	Class size, pupil attentiveness and peer relations.	*British Journal of Educational Psychology,* 73 pp 15-36	Psychology
O'Brien, L.	(2003)	The rewards and restrictions of recess.	*Childhood Education.* **79** (3) pp161-167	Education
Evens, J.	(2003)	Changes to primary school recess and their effect on children's physical activity: An Australian perspective.	*Journal of Physical Education New Zealand,* **36** (1) pp 53-62	Education
Spencer, A.	(2003)	Accessibility and your playground	*Parks and Recreation.* **38** (4)	Special Education
Bixler, R.D., Floyd, M, F., & Hammit, W.E.	(2002)	Environmental socialization.	*Environment and Behavior,* **34** (6**)** pp 795-819	Social and Psychology Sciences
Blatchford, P., & Moriarty, V.	(2002)	Relationships between class size and teaching: A multimethod analysis of English infant schools	*American Educational Research Journal,* **39** (1) pp 101-132	Education
Fujiki, M., Brinton, B., & Isaacson, T.	(2002)	Social behaviors of children with language impairment on the playground. A pilot study.	*Language, Speech, and Hearing Services in Schools,* **32** (2) pp 101-113.	Psychology
Harness Goodwin, M.	(2002)	Exclusion in girls' peer groups: Ethnographic analysis of language practices on the playground.	*Human Development,* **45**, (6) pp 392-415	Anthro-pology
Packer Isenberg, J., & Quisenberry, N.	(2002)	Play: Essential for all children	*Childhood Education.* **79** (1**)** pp 33-40.	Education
Pellegrini, A D., Kato, K., Blatchford, P., & Baines, E.	(2002)	A short-term longitudinal study of children's playground games across the first year of school: Implications for social competence and adjustment to school.	*American Educational Research Journal.* **39** (4) pp 991-206.	Education

Pereira, B., da Guia Carmo, M., & Fale, P.	(2002)	Playgrounds. Comparative study of six districts in the region of Cavado in the north of Portugal.	Paper presented at the European Conference on Educational Research, University of Lisbon, 11-14 Sep 2002.	Education
Thompson, D., Hudson, S.D., & Bowers, L	(2002)	Play areas and the ADA. Providing access and opportunities for all children.	*Journal of Physical Education, Recreation & Dance*, **73**, (2) pp 37 – 41	Physical Education
Segal, R., Mandich, A., Polatajko, H., & Cook, J.V.	(2002)	Play time.	*The Interdisciplinary Journal of Rehabilitation*, **15** (8) pp 44-5.	Occupation Therapy
Skar, L	(2002)	Disabled children's perception of technical aids, assistance and peers in play situations.	*Scandinavian Journal of Caring Sciences*, **16** (1) pp 27-33	Social/ Caring Sciences
Spencer, A.	(2002)	Playground of dreams	*Parks and Recreation*, **37**, (11) pp 64 – 68	
Stalnacke, I.	(2002)	*Springtime for children? Reflection and learning inspired by Reggio Emilia.*	Paper presented at the Conference on Educational Research University of Lisbon, 11-14 September, 2002.	Education
Sutterby, J., & Frost, J.L.	(2002)	Making playgrounds fit for children and children fit for playgrounds.	*Young Children*, **57** (3**)** pp 36-41.	Education
Zinger, G.	(2002)	Playground society.	*School Library Media Activities Monthly*, **19** (2**)** pp 40-44.	Education
Betsy, C.	(2001)	Give children a place to explore – Guides for preschool playground design.	*Child Care Information Exchange*, **138** pp 76-79.	
Doctoroff, S.	(2001)	Adapting the physical environment to meet the needs of all young children for play.	*Early Childhood Education Journal*, **29** (2**)** pp 105-109.	Education

Epstein, D., Kehily, M., Mac-an-Ghaill, M., & Redman, P.	(2001)	Boys and girls come out to play: Making masculinities and femininities in School.	*Men and Masculinities*, **4** (1**)** pp 158-172.	Sociology
Glascott Burriss, K.	(2001)	A Review: Journal of Research in Childhood Education Vol. 15, No. 2, Spring/summer 2001.	*Journal of Research in Childhood Education*, **78** (1**)** pp 62 - 64	Education
Fjortoft, I.	(2001)	The natural environment as a playground for children: The impact of outdoor play activities in pre-primary school children.	*Early Childhood Education Journal*, **29** (2**)** pp 111-117.	Education
Hudson, S., & Thompson, D.	(2001)	Are playgrounds still viable in the 21st century?	*Parks & Recreation*. **36** (4**)** pp 54-63.	
Jacobs, P.	(2001)	Play leadership revisited.	*International Journal of Early Childhood*, **33**, (2) p 32 - 43	Education
Landau, S., Milich, R., Harris, M.J., Larson, S.E.	(2001)	"You really don't know how much it hurts:" Children's and pre-service teachers' reactions to childhood teasing.	*School Psychology Review*, **30** (3**)** pp 329-343	Psychology
Rittner, H., & Robbin, M.	(2001)	Playgrounds: They're not just for fun anymore.	*School Planning & Management*, **40** (2**)** pp 61-64.	Education
Sheridan, S., & Schuster, K-M.	(2001)	Evaluation of pedagogical quality in early childhood education: A cross-national perspective.	*Journal of Research in Childhood Education*. **16** (1**)** pp 109-135.	Education
Sook-Young Shim., Herwig, J.E., & Shelley, M.	(2001)	Preschoolers' play behaviours with peers in classroom and playground settings	*Journal of Research in Childhood Education*. **15** (2**)** pp 149-164.	Education
Smyth, M.M., & Andersson, H.I..	(2001)	Football participation in the primary school playground: the role of coordination impairments.	*British Journal of Developmental Psychology*, **19** (3) pp 369-379.	Psychology
Waite-Stupiansky, S., & Findlay, M.	(2001)	The four Rs: Recess and link to learning.	*The Educational Forum*. **66** (1**)** pp 16-26.	Education

Tonucci, F., & Rissotto, A.	(2001)	Why do we need children's participation? The importance of children's participation in changing the city.	*Journal of Community & Applied Social Psychology*, **11 (6)** pp 407-419.	Social Psychology
Watkinson, D.J. Dunn, J.C., Calvaliere, N., Calzonetti, K., Wilhelm, L., & Dwyer, S.	(2001)	Engagement in playground activities as a criterion for diagnosing developmental coordination disorder.	*Adapted Physical Activity Quarterly,* **18** (1) pp 18-34	Social Sciences
Brodin, J. & Molosiwa, S.	(2000)	International outlook – An empirical study on teacher's views of play in Botswana.	*Euro Rehab,* 2, pp 65-72.	Education
Carpenter, M., Mizwicki, M., Kennedy, J., & Docheff, D.	(2000)	Should the ratio of supervisors to children be the same for the outdoor playground as the indoor classroom?	*Journal of Physical Education, Recreation & Dance*. **71** (4) pp 10-13.	Education
Charlton, T., Panting, C., Davie, R., Coles, D., & Whitmarsh, L.	(2000)	Children's playground behaviour across five years of broadcast television: A naturalistic study in a remote community.	*Emotional and Behavioural Difficulties***, 5** (4) pp 4-12.	Psychology
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Subjects by which to organize and structure the articles

1. Self identity and group identity on the playground
2. The correspondence with social and cultural aspects
3. The rights of all children to play
4. How children learn and develop through movement, play, and sensory experience
5. Planning and organizing the playground
6. Gender aspects in outdoor play
7. The adult's role, working and playing alongside the children.
8. Bullying and victimizing
9. Structure and the pedagogical process

Self identity and group identity on the playground

School recess

Waite-Stupiansky and Findlay (2001) point out that school recess is an area of great importance and that recess, usually conducted outside, can be seen as a period of free play traditionally accorded elementary and sometimes middle school-age children. This period can range from one 20-minute break per day to as much as a total of 90 minutes out of the school day. A key component of recess is that it is unstructured and undirected. Another criterion is that children are allowed to choose their activities, activity levels, and degrees of social interaction. Waite-Stupiansky and Findlay refer especially to Pellegrini and Smith (1993) when talking about the area of school recess

Recess also provides teachers with an opportunity to be less administrative and controlling and to observe their students in an environment different from the classroom. Waite-Stupiansky and Findlay (2001) states that schools are under pressure to show increased academic achievement. Educators and policy makers have assumed that students will perform better academically if given more instructional time, but they ask if eliminating recess will help children learn. Or can recess benefit the learning process?

During recess, children engage in exercise, game-playing, and social interaction. Social interactions coupled with low physical activity also accounted for a large portion of behavior. Clearly, though the opportunity for physical activity is an important aspect of children's behavior during recess, social interactions are important as well (Waite-Stupiansky and Findlay 2001). The social benefits of recess are also significant; students learn how to resolve and avoid conflicts and to build relationships. They direct their own activities, providing an important relief from stress while promoting positive self-esteem and a positive attitude toward school. Recess also affords children the opportunity to enhance their language development (op. cit.).

Waite-Stupiansky and Findlay (2001) point out that physical exercise, including recess, enhances brain function. Breaks in structured learning activities help humans learn better. Students who spend more of their

school day engaging in physical activity perform better academically than those who spend more time in instruction. Daily outdoor recess provides students with the opportunity to refresh their brains, exercise their hearts and muscles, choose their own activities, make friends, work out problems, and have fun (op. cit.).

Social skills intervention during elementary school recess

Andersson-Butcher et al. (2003) suggested that using play as a medium for enhancing social and life skill development in disadvantaged young people could be of importance. But few programs have examined play in elementary schools, and little attention has been given to the role of playground supervisor. Research conducted by Andersson-Butcher et al. (2003) concerns social skills and intervention during elementary school recess. They state that recess supervision in schools is the job nobody wants. The role of mandatory recess duty is often seen as an "unwelcome task" by teachers and staff at elementary schools. Many teachers would rather get a break from their students and have the opportunity to chat among themselves.

Andersson-Butcher et al. (2003) state that a growing concern about violence perpetuated by bullies on school playgrounds needs a progressive intervention that promotes the psychosocial development of children who are most susceptible to school violence during the school day. The most vulnerable time for many children is during recess on the school playground. Programs during recess hold great potential for promoting positive playground and school experiences among children. The study discussed in this article explores the effect of social skills intervention on problem behaviors displayed by elementary school children during recess. Findings conclude that social skills intervention significantly decreased problem behaviors among school children at recess.

The study was conducted in an urban elementary school in the U.S. Approximately 462 students attended the school. Boys made up 52 percent of the student body, and girls 48 percent. Students were selected from the first to the sixth grade. Students came from vulnerable environments. The free and reduced lunch rate at the school was 60

percent, and 62 percent of the student body was transient during the school year. Twelve target behaviors were selected as dependent variables based on established school playground rules. The problem behaviors were: hitting, pushing/shoving, kicking/tripping, verbal abuse, throwing objects, chasing each other on the equipment, standing on the equipment, twisting the swings, tying people with ropes, climbing on equipment not appropriate for play, tackling and pile-ups, and swinging upside down (Andersson-Butcher et al. 2003).

The number of recess supervisors on the playground each day was documented. This included the number of university students collecting the data, and school personnel assigned to recess duty. The students' problem behaviors were observed by having the data collector circle the playground area. The instance of a problem behavior within a 50-yard radius of an established data collection path was reported on the observation checklist.

The result shows that intervention was effective in decreasing the problem behaviors on the playground during recess. Anderson-Butcher el al. suspect that these results may have occurred for two reasons. First, the intervention offered more structured play for the students to participate in during recess. And secondly, the reinforcement and feedback provided from the intervention fostered social skills and cooperation among students. Boulton (1999) also underscores this finding. The results confirm the need for more structure and organization on the playground. Structured interventions that increase organization on the playground can be instrumental in reducing aggressive and problematic behavior among students.

Andersson-Butcher el al. think that many Americans fear that their children are not keeping up academically with children from other countries, and that therefore recess has been removed from many school programs. It is thought that recess takes children away from academic curriculum that prepares children for the future.

The rewards and restrictions of recess

In another U.S. study O'Brien (2003) intended to show the importance of school recess and play. The experience of being a playground volunteer strengthened O'Brien's resolve to be a committed advocate of recess.

The study shows that the children are permitted only a short time for free play in an increasingly demanding, controlled, and tightly scheduled day. The situation reminds O'Brien of Foucault's notion of the panoptic, the all-seeing eye that regulates what is arguably the only time during the entire school day that children can be free to play. It troubles him and he states that we have to think of recess as integral and essential to children's education. Furthermore, adults have labeled certain play as "good" or "appropriate," versus that which they consider "bad" or "inappropriate." Thus, the freedom implied for young children within the construction of play is often an illusion and schools need to consider the whole child and his or her development of independence and a positive sense of self (op.cit).

Evens (2003) has examined the problems in Australia. Evens offers some suggestions as to how schools might preserve and promote physical activity during recess breaks. Evans states that there is a clear connection between a well-planned physical education and sports programs and an active playground. He says that if children are introduced in physical education to a variety of activities involving ropes, hoops, bats, balls, bean bags, and so on then, with a little encouragement, they will use this equipment on their own time during recess/lunch breaks if they have access to it. This not only provides them with the opportunity to practice and extend their skills but it motivates them to be active.

Evens states that Australian people see headlines on almost a daily basis lamenting the declining health of Australian children. They are said to be inactive, unfit, overweight and lacking in fundamental motor skills. Calls have gone out to parents to encourage their children to be more active, and to schools to counter these problems by allocating more time to sport and physical education. However there are particular problems to be addressed in both instances. One aspect of schooling that is rarely considered in discussions about how to increase children's activity levels is recess.

Evens (2003) also states that it is increasingly evident that fewer and fewer opportunities are being provided for children to play freely and actively during recess breaks. Evens' preference is for children to be left alone to devise their own games and activities during recess/lunch breaks, with minimal intervention from supervising adults. He found that much of the school day is spent in activities organized and controlled by adults, and children need some time and space to themselves. In the best of circumstances playtime gives them the opportunity to make choices about what, where and with whom they will play. Evens admits to some reservations about the growing trend for schools to organize activities for children during recess/lunch breaks. Concerned about the inactivity of many children and the incidences of misbehavior on the playground, some schools have taken to organizing games and sports during lunchtime. This may mean that more children are active but it comes at a cost for both the teachers and the children. Referring to Blatchford (1998, p 171) Evens points out, "that this represents a tension between exercising greater control of student behaviour on the one hand, and the value of their independence on the other". Evens also thinks that there is a real danger that these organized activities may come to be seen as a "de-facto" physical education program .

Evens (2003) refers to Pellegrini and Blatchford's (2000) recent summary of the research literature and attests to the contribution recess breaks have made to children's physical and social development. As Pellegrini and Blatchford (2000) acknowledge, times are changing and these breaks are coming under increasing scrutiny from parents and teachers who are looking at ways to reduce disruptive behavior on the playground and increase the amount of time devoted to the academic curriculum. Evens thinks that any loss of recess time has the effect of further reducing children's opportunities for active play. The need to encourage children to be more active is so important that any reduction of recess breaks needs to be taken seriously.

Social competence and adjustment to school

Another interesting research project focuses on school recess. Pellegrini, Kato, Blatchford, and Baines (2002) analyzed implications for social

competence and adjustment to school. In these studies children's games on the playground at recess during their first year of full-day mandatory schooling was examined. They stated that children's games, surprisingly, have not received extended empirical attention from psychologists or educators for a number of years. The paucity of research on children's games may be related to availability of and access to a research sample of young children at a time when they typically engage in games. Primary school children are less accessible for study and offer fewer opportunities for observations of peer interaction, as much of the primary school day is tightly scheduled around regimens of solitary and sedentary academic work (Pellegrini & Blatchford, 2000).

Pellegrini et al. (2002) highlight the fact that it is important to differentiate games from play because the two sometimes are confused, possibly because they share some design features. Both play and games are governed by rules.

> The rules governing games are a priori and codified while the rules governing play are flexible, negotiated by players in different ways, and not set in advance. More time is typically spent negotiating and re-negotiating rules in play than in play per se. Games, on the other hand, are guided by explicit rules that are set in advance and violation of these rules usually results in some form of sanction, not re-negotiation. (Pellegrini et al., 2002, p 992).

It is most important for the purposes of this study that recess is one of the few times during the school day when children are free to interact with their peers in games with relatively few restrictions. Pellegrini et al. describe in this study the occurrence frequency of children's games on the school playground at recess throughout the entire first grade year. This is of importance since there is a general lack of recent descriptive data on children's games.

The children in this study were recruited from two urban primary schools in a large American Midwestern city. In this school system, first grade was children's first experience with full-day compulsory schooling. All of the first grade classes in two schools agreed to participate. The schools were in close geographic proximity and were ethnically diverse. Over 75 percent of all children received free or reduced lunch assistance. Consent forms were sent out to all students

during the first week of the school year. The sample consisted of 77 children (30 males and 47 females), and had a mean age of 6.4 years. The methods utilized included direct behavioral observations, peer nominations, self-reports, and teacher and research associate ratings of children. Children were interviewed twice during the course of the school year, in the late fall and in the late spring.

Pellegrini et al. chose to conduct observations following two formats, one using focal child sampling with continuous recording, and a second using scan sampling with recording (Pellegrini, 1996). Children were also scan-sampled across the whole year. Based on earlier pilot work by Blatchford (1989), the coded games included chasing games, ball games, and verbal games. Chasing games were defined as simple games involving alternating reciprocal role-playing and locomotion. Ball games were defined as rule-governed activities with a ball as the central object of activity. Verbal games were interactions that centered on rule-governed interactions where verbalizations were a central part of the interaction.

The results show that the frequency with which children engaged in games throughout the first year of schooling varied by gender and time. Boys engaged in more games and in a greater variety of games. Girls engaged in more verbal games, such as clapping games and jump-rope. Pellegrini et al. think that this gender difference reflects the finding that boys are more physically active than girls as a result of both hormonal and socialization events. They state that when boys are put into a context that affords opportunities for physically vigorous activity, such as an outdoor playground, predictable and robust gender differences are observed. Girls, compared to boys, were more frequently observed in verbal games. This finding has been replicated across a variety of research teams with different theoretical and methodological orientations, but it should be noted that all studies, including this one, had relatively small samples (op. cit.). Girls are generally less concerned with games than boys are, because games are competitive. Pellegrini et al. theorize that boys may play games more than girls do because the competitive nature of games is more in keeping with their hierarchic and competitive nature. Gender differences also emerged as the school year progressed. These results confirm the socialization expectation that the

playground is a venue that affords males opportunities to engage in locomotor and competitive activities (Pellegrini et al. 2002).

During the course of the year, girls' participation in games remained the same, chase games decreased, and ball games increased. Pellegrini et al. (2002) thinks that chase games may have declined with time because of the relative simplicity of these games. They are also commonly observed in very young preschool children's play. With increasing social and cognitive development the familiarity with peers and the complexity of the games increased. The study show that as the year progressed chase games declined and more complex games, for example ball games, increased.

Pellegrini et al. (2002) considered games to be an important developmental task for children and especially boys. They point out that this finding is consistent with the theoretical assumption that the social rules and roles that children learn in one niche should predict competence in other areas. For boys, game facility was a more powerful predictor of social competence than it was for girls. Game leadership predicted boys' school adjustment but not girls', although game facility predicted school adjustment for girls. These results also indicate that children's peer relations in school predicted school success.

Best friend across settings

Ray, Cohen and Secrist (1995) did a study of children's classroom sociometry and the sizes of their best friend networks across three social settings. These settings included classroom, school playground, and nonschool. Children in grades one through six attending a university-affiliated public elementary school participated, 238 males and 209 females. The questionnaire data obtained from 447 elementary school children revealed that for both classroom and school playground settings, popular status children had the most reciprocal best friends and rejected status children the fewest. Rejected status children had more reciprocal best friends in the playground than in the classroom. Girls reported more nonschool best friends than boys did.

Ray, Cohen, and Secrist's (1995) findings are discussed in terms of the influence of perceptions of behavior in context, children's social

reputations, and the accessibility of friendships across social settings to children of different sociometric statuses. They found that classroom physical and educational structure influences friendship patterns. Also, there were more reciprocal friendships in open classrooms and when triads of children were observed.

The playground and classroom at school offer different social settings. Several characteristics of the playground would appear to facilitate peer social development. Often, there is less adult supervision of activities on the playground than in the classroom. Children have the freedom to engage in free-flowing playgroups. The focus of many playground activities is on leisure/sports games rather than academic work, and children have access to open space. Research investigating children's friendships on the playground is sparse, but available evidence suggests that children interact with their classmates on the playground. Thus, playground friendship network size as a function of classroom sociometric status is the same as in the classroom (op. cit.).

Ray, Cohen, and Secrist (1995) found that children's social reputations influence children's friendship patterns across settings. Unpopular children in the classroom have classmates on the playground that hold negative opinions of them. These negative opinions may be shared with others on the playground, who then adopt these negative opinions. The reverse is equally likely.

The authors also found that rejected status children use inefficient peer entry strategies and employ less effective social problem-solving skills than their more sophisticated counterparts. Popular status children form or maintain friendships with a large proportion of their play companions. On the school playground, rejected status children engage in more aggressive behaviors and more rough and tumble types of play than children from other sociometric status groups. They point out that it is likely that the physical and social constraints and opportunities of different settings play a major role in both the perception of behaviors and in the accessibility of playmates.

Outdoor play and social-cognitive development

Hartle, Campbell, Becker, Harman, Kagel and Tiballi (1994) observed the playground behavior and social interaction of 27 kindergarten children in a university laboratory school, focusing on the children's ability to successfully negotiate social interactions. They found that communication skills, ability to recognize and understand others' emotions and needs, and self-confidence are critical to positive social development.

Hartle et al. (1994) examined the social strategies that contributed to the children's success, or lack of success, when interacting with peers in an often-overlooked setting, the playground. When children are outdoors, they have the freedom to exhibit a wide range of social competencies. Playgrounds are essentially social environments, and as such they provide both the physical and interpersonal resources that allow children to meet. The observed group was an unified kindergarten class of 27 children of mixed age, race, socioeconomic status, gender and ethnicity. The outdoor playground was a modestly equipped grassy area adjacent to the classroom. There were five swings along a metal framework, three seesaws, and a set of monkey bars. One of the guiding questions was whether there are clear indicators of social competence among kindergarten peers as they play at outdoor recess.

Hartle et al. (1994) scored children's exact language and described their interactions. They observed the children during recess four days per week for six weeks, stationing themselves in particular zones on the playground and watching all children who came into their zones.

The results show that there is much evidence that social competence affects children's success in school and later life. Hartle et al. (1994) also highlight the importance of supporting children's social competence during the preschool and kindergarten years. Some kindergarten children lack the skills they need to join a playgroup with this in mind.

Hartle et al. (1994) identified factors that are critical to children's success in social situations:

1. The child encodes the presented social cues.
2. The child interprets the encoded cues and gives them meaning.

3. The child generates one or more potential responses to the interpreted cues.
4. The child evaluates and decides which response to make. Aggressive children are more likely to think that aggressive actions will be easy and effective.
5. Finally the child acts on his decision, eliciting a social reaction from a peer, and the cycle repeats itself (p. 29)

They suggest that children need time to explore and experiment with the correct social bids for entering and maintaining play episodes and resolving conflicts with peers. During uninterrupted play episodes, children can adopt the perspectives of others, both real and imagined. This allows them to expand symbolic and representational thinking. Children need outdoor spaces and structures that encourage these social experiences. Finally, teachers should observe and record children's developing social skills regularly, being sure to observe all children for roughly equal periods of time (Hartle et al. 1994).

Playground society

Zinger (2002) considers the playground to be an informal educational setting for social learning, and he discusses the interactions that take place between children and playground behavior. From different studies he describes playground behavior; and includes creative class activities, including role playing, that address playground behavior. Zinger came to the conclusion that the playground is a laboratory, an informal educational setting where many kinds of social learning take place. Although specific attractions and games provide the content of playground life, it is what happens when children interact that makes their playground powerful and revealing. This is where children learn to engage others, develop conversational skills, and cultivate and sustain friendships. It is also where children can exchange information, ideas, jokes, gossip, and opinions (Op.cit.).

Observing behavior on playgrounds

Charlton (2000) points out that playgrounds are not only an important part of children's development but also a popular location for measuring children's behavior and social interaction in both laboratory and natural settings.

The free-play behavior of three- to eight-year-olds was videotaped on two playgrounds before the availability of broadcast television in the South Atlantic island of St Helena. Similar-aged children's behavior on the same playgrounds was recorded five years after television's arrival, and recorded behaviors were coded for prosocial and antisocial acts. Out of 64 comparisons, only nine significant shifts were found. Five revealed decreases in prosocial behavior (boys and girls), two showed increases in prosocial behavior (boys only) and the remaining two showed decreases in antisocial behavior (boys only)(Op.cit).

Charlton's (2000) opinion is that laboratory studies of children's social behavior offer high internal validity because of the standardization of conditions, control over physical and social variables and improved observability of verbal and non-verbal interactions. However, they are limited in terms of external validity precisely because of their contrived implication of social processes. Overall, findings from this study on anti-social behavior are consonant with those from other studies in the St. Helena Project. Results showed that viewers did not differ significantly from non-viewers on either their pre-TV or post-TV behavior scores. Overall, TV viewing was not correlated with antisocial behavior scores at any point (op.cit).

The correspondence with social and cultural aspects

Urban children's access to their neighborhoods

An interesting study was made 1991 by Sanford, investigating changes in children's use of local public space between 1915 and 1976. Data was collected from 29 adults who were interviewed regarding their experiences in New York City neighborhoods as children. Other sources was used, including US census reports they were also consulted to assess demographic changes. Results showed substantial changes in the age at which children were first allowed outdoors without supervision. Also in the number and quality of settings visited, and in the number and nature of environmental obstacles. Changes could be seen in the number and nature of parent-imposed restrictions, and in the number of professionally supervised activities undertaken. Both the degree to which the neighborhood environment was supportive of children's play and children's access to their neighborhood have changed substantially since the 1940s (op.cit).

Sanford (1991) reports that children and young people in cities around the world are increasingly cut off from using and enjoying their neighborhoods; this has been asserted and studied for at least two decades. Factors commonly associated with the problem include increasing street crime and automobile traffic, and, through vandalism or municipal neglect or mismanagement, the deterioration or destruction of parks, playgrounds, and schoolyards. Lately, the problem, aggravated by drug-related street crime, has become so acute that the popular print media have given it prominent attention. Sanford (1991) made a content analysis of interviews with longtime local residents, as well as a US census search in an attempt to detect changes in how children from 1915 to 1976 have used the evolving landscape. This may help trace some present-day problems to their origins and introduce planners, designers, and policymakers to the long-term implications of social and environmental change for children. The following findings are in focus, and historical changes in these areas were traced:

1. age at which child is first allowed outdoors without supervision
2. number of neighborhood sites visited
3. obstacles and barriers
4. parent-imposed restrictions
5. participation in professionally supervised activities (Sanford, 1991, p 78).

Sanford (1991) points out that there has been a steadily increasing trend of parents keeping their children under supervision longer with succeeding generations. But one type of Inwood setting that remained in steady use was the schoolyard. There was a general tendency for the number of obstacles to increase over the generations. Many obstacles tended to have to do with the roughness of the Inwood landscape – with its construction sites, unpaved roads, swampy river edges, and thick woodland. Some obstacles and barriers carried over from earlier generations. There were also some additions, as adult interference began playing a large role. Some building superintendents no longer allowed children to play in the courtyards, and park employees chased older children from playgrounds intended for young children. Parental restrictions departed from the pattern, seen so far, of freedom becoming more restricted over the generations. Most of the parent-imposed restrictions had to do with traffic, the woods, or the rivers, all of which are also environmental barriers. Girls were sometimes warned to beware of unfamiliar men. Sanford thinks that it is interesting that no parents warned their children of the dangers of gangs; that seems to have been a thing boys learned on their own.

Sanford (1991, p 82) thinks that availability and popularity of professionally supervised activities for Inwood children was one of the most significantly changed parts of their play patterns. An interplay of forces in Inwood has worked to restrict children's unsupervised neighborhood activity. Most prominent were the number and variety of places children can or may visit and the increasingly adult-directed nature of outdoor play. Blame cannot be placed solely on crime, or on physical environment, or on automobile traffic (op. cit.). Even if it is a small size of sample population, this study tends to confirm the thesis that children's freedom of access to their neighborhood has declined substantially over the generations. Stanford suggest that directions for further research should call for an enlargement of the sample population

and replication of the study in other urban communities, and an extension of the historical time under investigation to include generations of children present and emerging (op. cit. p 84).

How American children spend their time

If we go on looking at children's activities today, Hofferth and Sandberg (2001) address four key areas of children's activities: school and day-care time, discretionary time in free play versus organized activities, time in extracurricular learning activities, and time spent in family activities. They go on to tell us that children do not learn in formal settings only. For young children, play is their work. Besides motor skills, children develop initiative, self-regulation, and social skills in play.

Hofferth and Sandberg referrs to Pellegrini & Smith (1998) that point out that playing is a broad category that includes playing cards and board games, and doing puzzles. It also includes playing social games such as jump-rope, playing pretend games, playing with toys, and unspecified indoor and outdoor play. Hofferth and Sandberg point out that a related category, outdoor activities, includes gardening, boating and camping, picnicking, pleasure drives, walking, and hiking. They state that the types of activities in which children engage are likely to be shaped by their current family context, including maternal employment, education, and family structure. They ask in this study whether the amount of time spent in play or other leisure time activities matters to children's achievement and behavior. The purpose of this study was to examine how American children under age 13 spend their time, what sources of variation there are in time use, and what associations there are with achievement and behavior. Data comes from the 1997 Child Development Supplement to the Panel Study of Income Dynamics. The results suggest that parents' characteristics and decisions regarding marriage, family size, and employment affect the time children spend in educational, structured, and family activities – and that this, in turn, may affect their school achievement.

The results presented are based on 2,818 children between birth and age 12 whose parents had completed time diaries for them (or with them) for two days of the previous week. Children were reported to have, on

average, 22 to 24 activities on a weekday and 24 on a weekend. The mean number of different activities, the "variety of activities," was 11 to 13 per day on both weekdays and weekends.

The results show that instead of spending their time on unstructured activities, children today may be spending a large percent of their time in highly structured activities, such as sports programs, church-sponsored activities, and a broad category called "visiting." Hofferth and Sandberg subtracted nondiscretionary time spent in personal care, eating, sleeping, and school from 168 hours. That amounted to 51 hours or 30 percent of the children's week. About half of this free time was spent in unstructured play (15 hours) or watching television (12 hours). One result that is interesting in the context of this literature review is that only half an hour was spent on outdoor activities. In contrast, 4 3/4 hours were spent in sports, 1 hour was spent in church, and 3 hours were spent visiting.

Children’s play in cross-cultural perspective

Pope Edwards (2000) have done a qualitative and quantitative reanalysis of the Six Cultures data on children’s play, collected in the 1950s. It was done in order to revisit worlds of childhood during a time when communities were more isolated from mass markets and media than they are today. A count was performed of children aged three to ten in each community sample scored as engaging in creative-constructive play, fantasy play, role-play, and games with rules. Children from Nyansongo and Khalapur scored lowest overall, those from Tarong and Juxlahuaca scored intermediate, and those from Taira and Orchard Town scored highest**.**

Cultural norms and opportunities determined how the kinds of play were stimulated by the physical and social environments. Whether adults encouraged work vs. play, or if children had freedom for exploration and motivation to practice adult roles through play were other determinants. A final determinant was if the environment provided easy access to models and materials for creative and constructive play (Pope Edwards, 2000).

Pope Edwards (2000) think that these data have documentary historical value because they offer a substantial archive of notes and coded data focused on child and family life observed for 20 years between the mid-1950s and mid-1970s in communities that have undergone economic, political, and cultural changes during the ensuing decades. Focus in this article is on social interaction rather than individual behavior.

The results show that creative-constructive play was evident in all six of the communities. Children seemed to have a developmental need to make and combine things, to make marks and draw, and to handle and reshape materials that could not be subdued. In observations from Nyansongo and Khalapur, children continued in their self-directed, constructive activities with mud and cloth even when criticized or told to stop; they were simply too absorbed and interested to heed others' interventions (op. cit.).

The observations did not offer examples of children making complex toys, such as dolls with costumes, bottle-cap figures, or wire cars, but the children were seen building houses, dams, cars, and roadways, and drawing in and on all kinds of surfaces. Pope Edwards (2000) say that as they engaged in these creative-constructive stories, their minds were probably actively constructing stories or event scenarios for themselves. Thus either role play or fantasy play was taking place implicitly.

Today as children have gained exposure to more models of other children's play as well as more access to materials and resources for play, their variety and complexity of creative-constructive play can be predicted to have increased in the community.

Pope Edwards (2000) point out that both play and work allowed children to build their repertoires of skills and schemes and to exercise and extend their knowledge and control over their environments. Cultural norms and opportunities determined the degree to which play was stimulated by the physical and social environments. The authors found some key factors that included whether adults "considered play a good use of children's time or just an annoyance, whether adults preferred to conservatively preserve tradition or instead to instigate innovation, and whether the environment provided easy access to models and materials for creative and constructive play. Play of several kinds

was observed in each community and depended on the environment only for reinforcement, not for instigation" (Pope Edwards, 2000, p 337).

Today's children's play differs from that of their parents' generation

Freeman (1995) suggests that contrary to popular perception, children are becoming increasingly alienated from the natural environment, especially for play. A study done in Leeds, U. K. investigates how the outdoor play of today's children differs from that of their parents' generation. Findings include issues for planners and landscape architects concerning the need for greenspace and traffic control problems. Freeman (1995) thinks that the last ten years have seen a growing recognition of the significance of wildspace in urban areas. Children are inheriting a world that is becoming ever more aggregated as they are removed from contact with the adult world, and with the development of the idea that the environment needs protecting from children and young people. The observations outlined here represent the initial findings of an on-going small-scale research project investigating the changing nature of children's outdoor play. The research addressed the following questions: What is happening to local greenspace? To what extent is greenspace used for play?

Results show that when parents were asked why their children had so little freedom compared to their own childhood, the primary reason given was that "it is no longer safe". This was due to fear of strangers and fear of traffic. Play has changed a great deal over the years, in particular much of the inventive play, i.e. building and tree climbing has gone. Parents said that children do not seem to play the same any more. Maybe they have too many material things now. There used to be lots of us playing outside, making our own fun (op. cit.).

The fact that children do not have the freedom to play in the places their parents visited does not necessarily mean that their children are denied access to these places, as several parents mentioned that they themselves take their children there.

The study shows that small areas of greenspace, both formal and informal, are of importance to local children. But one of the two most

serious factors inhibiting children's freedom to play is parental fear of traffic (Freeman, 1995).

Views of play in Botswana

Brodin and Molosiva (2000) conducted a pilot study based on data collected in Gaborone, Botswana, Southern Africa. The target group was teachers in special education training at the University of Botswana. Thirty-two teachers answered a brief questionnaire about play, focussing on the meaning of play in childhood and the most popular games among children in Botswana. Twelve special teachers also participated in a workshop on play memories. The concrete aims were to find out how special teachers in Botswana defined the concept of play, and what their favorites were among the games they played in childhood.

The results showed that the teachers regarded play as important and that many games were universal. Most cultures regard play as an important component in child development. How children play and what kind of games they play seem to be related to culture, and depend primarily on prerequisites, access to play material and how play is valued by their social environment.

When looking at the results from Brodin and Molosiva's (2000) study, it is evident that many of the replies are universal and could have originated from teachers anywhere in the world The concept of play means primarily joy, pleasure, and motor activities, and participation in different games and sport activities. The teachers are aware of the importance of play in child development and it was evident that all games trained and stimulated physical, emotional, cognitive and social abilities. Small balls and ropes are used; this is easy to understand as this kind of play material is cheap and can easily be found everywhere. "Hide and seek" and "Ready" were the most popular games. Soccer was on the list but the shortage of men in the study was probably reflected in the answers.

The results from the workshop confirmed that the games the teachers could remember that they used to play in childhood were the same as children play all over the world. It is supposed that playing reflects daily living; the spare time interests are very similar for all young children and

adolescents, and the only difference is that looking at video or TV was not mentioned at all (op. cit.)

Elements of curriculum design for young children

Curriculum design is also important and is often missing when it comes to outdoor environments. Anning (1999) presents a project aimed at creating an informed community of practice in a group of educators through their involvement with action research. A significant outcome of the project was the enhanced professional knowledge embedded in their practice across all constituencies of the team.

Anning (1999) bases her analysis on Bronfenbrenner's ecological model of human development from the 1970s. A new paradigm for the sociology of childhood is emerging, one in which children are seen as having power and authority in their own right, and not simply in relation to the social constructions to which adults around them assign them. In searching for models of preschool provision which might exemplify the concept of children as active co-constructors of knowledge and culture within their own identities as people and learners the Reggio Emilia in Northern Italy is examined. The answer is that the image of the child is rich in potential, strong, powerful, competent, and most of all connected to adults and other (op.cit.).

Children's use of the street as a playground

The street provides a setting that is conducive to childhood development and to various types of play. It affects the personality, character, and ability of a child. In this study Abu-Ghazzeh (1998) explains the spatial and temporal relationship between children and the street as affected by the accommodative forces of the street environment. The author stresses that the physical environment of the street is an operative factor in human systems and that it is a significant factor in the development and maintenance of a child's self-identity. Urban streets in residential communities should be designed to provide a balance between the needs of children and those of motor vehicles.

Abu-Ghazzeh is associate professor of architecture at the University of Jordan in Amman. This article reviews the children's use of the streets in Abu-Nuseir, a residential community in Jordan. The street functions as an agent of socialization and provides a setting that is conducive to childhood development and to various types of play that enable that development. It affects the personality, character, and ability of a child. The importance of street play lies in the central role that play occupies in the physical, cognitive, social, and emotional development of a child.

Abu-Ghazzeh (1998) makes a suggestion that urban streets in residential communities should be designed to provide a balance between the needs of children and the needs of motor vehicles. What is required is to organize residential streets so that all can use the available space effectively. The main task that faces town managers in Jordan and in other Third World countries today is to elevate the street in the residential neighborhood from a mere traffic channel to a social institution for children. Abu-Ghazzeh has an interesting thought; like that of a playground, the design of a street should help children to identify concepts, shape, size, number, relationship between pairs, and so forth.

All children have the right to play!

Accessibility to playground

Spencer (2003) states that because of a renewed focus on accessibility, more and more playgrounds across America are accessible to children with disabilities. Spencer (2003) points out that play is an important part of children's lives, no matter what their abilities. Play enables children to develop skills in reasoning, creative expression and sensory perception. Socialized play, incorporating special-needs children with their able-bodied peers, serves to further the benefits of play, allowing children to discover their peers, and learn the similarities and differences that make them unique. Through play, children are constantly learning and exploring who they are, while developing physical attributes important to their overall health and wellness. When designing a playground, incorporating accessibility into the design should begin early in the process, with consideration given to layout, circulation, and component selection (op.cit).

Doctoroff (2001) also highlights considerations in designing high-quality, developmentally appropriate environments for all children. Suggestions for arranging classroom space focus on the arrangement and accessibility of play areas. Doctoroff points out that the creation of high-quality inclusive play environments is based on the premise that the play of all young children must be supported. Environmental support for play encompasses a wide array of strategies, ranging from well-defined, individual areas for play and strategic selection and placement of play materials to making the playspace and materials fully accessible and responsive to children with diverse abilities, interests, and needs. A classroom and outdoor play environment that is carefully planned to meet the developmental, sensorimotor, behavioral, social, and emotional needs of each child has the potential to enrich and extend the play possibilities for all of the children (op.cit).

Attitudes of key persons to accessibility and playgrounds for children

Prellwitz and Tamm (1999) point out that p1aygrounds are an important outdoor environment for children. But few playgrounds are designed to be accessible to children with restricted mobility. In this study the child with restricted mobility is defined as one who is unable to move around without the aid of a wheelchair, walking-frame, cane, or other walking device.

The purpose of the study was to explore the attitudes to accessibility problems in playgrounds among two groups of key persons: “creators” and “users of playgrounds” in a medium-sized municipality in northern Sweden. Eleven key persons, five “creators of playgrounds” and six “users of playgrounds” were interviewed in a semi-structured interview. The interviews were analyzed according to content analysis and coded under different themes.

The interviews with the users of the playgrounds were coded under two themes. The first theme was “The playground is not for me” and the second was “Assistance is a precondition for accessibility”. The results were discussed in the light of how the inaccessibility of play environments can affect the development of children with restricted mobility, and affect their possibilities of a life on a par with that of other children (Prellwitz & Tamm, 1999). The results showed that those who created playgrounds were hindered by disorganization, an insufficient knowledge of disabilities, poor economy, and unsuitable attitudes.

Prellwitz and Tamm (1999) point out one important question: How should playgrounds be constructed to correspond to the different needs of children? The results indicate that in the municipality studied there are many obstacles in playgrounds for children with restricted mobility. That means that the children with restricted mobility living in this municipality cannot play in a natural way in the municipality’s playgrounds. The demands imposed by this environment are in most aspects too high for children with restricted mobility. There have only been attempts to adapt the child’s ability with the help of personal or school assistants and technical aids, but no attempts have been made to adapt the environment to the child’s ability.

Prellwitz and Tamm’s (1999) study shows that the key persons who create the playgrounds have insufficient knowledge about impairment

and handicaps, and that their work methods do not naturally bring them into contact with those persons who possess such knowledge. Prellwitz and Tamm tell us that the fact that economy can be an obstacle is a well-known phenomenon in all societies, including Swedish society. The interviews expressed views on the costliness of adapting play equipment, but also on the costliness of consulting other professional groups. The playgrounds also lacked accessibility, and that seemed to surprise those who create these environments (Prellwitz & Tamm, 1999).

Play environments for children with special needs

Winter (1994) examine the implications of the Americans with Disabilities Act (ADA) and the role of developmentally appropriate practice when insuring the inclusion of children with disabilities in play environments. Winter (1994) discuss four principles that should guide the creation of safe, inclusive play environments: safety, developmentally appropriate practice, full inclusion, and interplay of the first three principles in unison.

To be considered an inclusive play environment, a play area must have three components: access, activity, and variability. Many supposedly inclusive play environments provide access, but fall short in the provision of either activity or variability. Access refers to a person's ability to physically enter a desired location. This is most often discussed in terms of door widths, ramps and the absence or presence of barriers. Activity is a person's ability to take an active part in an experience. It is not enough to get close to one's playmates without being able to engage in the same activities. The third aspect of inclusion, variability, refers to the ability of all persons to select from a range of options to find a personally appropriate choice (op. cit.).

ADA requires that reasonable steps be taken to ensure that all citizens have the same opportunities for education, recreation and job fulfillment. Winter (1994) suggest that consulting with physical therapists, occupational therapists and other specialists may yield valuable information to use in planning for the play and comfort of special needs children. Thompson, Hudson, and Bowers, (2002) confirmed these results in their study in 2002.

Segal, Mandich, Polatajko and Cook (2002) highlight an important subject – that physical activity play is important for the social life of children in terms of acquiring and maintaining friends and belonging to peer groups. They state that such activities may be difficult for children with motor coordination problems to master, and this difficulty appears to reduce their participation. School children with special needs often receive help through the public school system and, as a result, the interventions are often focused around the children's academic needs. This focus on academic needs may come at the expense of other important aspects of children's lives, particularly their social lives.

Segal et al. refers to Blatchford (1998) and his longitudinal qualitative and quantitative study of British children's experiences during break time. Blatchford describes how friendships develop in conjunction with physical activity play when children begin their first year in school at the age of seven. He states that at the beginning of the year, students play during break time with different groups of children and in various physical play activities. However, as the year progresses, the playgroups become more stable in the games played and in the children who belong to the groups. In this study, parents of children with Developmental Coordination Disorder (DCD) explained that their children's inability to participate in physical activity play contributed to their social isolation. Mothers described how their children could be identified on the playground from a distance because they were never moving or playing on any of the equipment. Mothers also described how peers excluded their children from physical activity games during recess because they knew the children with DCD are unable to perform these activities.

Segal et al. (2002) highlight the information in the new International Classification of Functioning, Disability and Health (2002) (ICF) that presents a framework for organizing and describing human functioning and its restrictions. This framework is based on the concept that impairment, which is defined as problems in body function or structure, may impact an individual's ability to perform activities and to fully participate in life. According to ICF the manner and the extent of the impact on an individual's activities and participation depend on the impairment, individual characteristics, and social context.

The results of this study show that parents' descriptions of the social impact of their children's DCD indicate that children's impaired performance of physical activities in the context of play in middle childhood may lead to participation restriction. One important factor parents identified are accepting peer groups. The most significant findings of this study related to the occupational therapy. Children with DCD who had the opportunity to master the performance of a desired activity or occupation in a safe environment took advantage of this opportunity. Parents reported that the effects of mastering such new activities and occupations were an increase in the size of the children's social group and in their adventurousness in bicycling to visit friends (Segal et al. 2002).

Skar (2002) also acquired after conducting her study a deeper understanding of how children with disabilities perceive their technical aids in play situations. Skar transcribed interviews with eight children with disabilities and analyzed the interviews according to the constant comparative method of grounded theory described by Glaser and Strauss. Three categories were found, forming a model describing the child's relations in play situations to technical aids, to assistance and to the play environment. Two of the categories included relationships with adults. The children's opportunities to play required that a parent or an assistant be present. Access to the playground also required the assistance of adults. The third category, relation to technical aids, is an individual one, as all the children perceived the technical aids differently. The technical aids were also seen as an extension of the child (Skar, 2002).

As mentioned, eight children with motor disabilities in the age group of six to eleven years were selected to participate in an interview. Each child had a medical diagnosis and was in need of a technical aid for his/her daily activities. The inclusion criteria were: six to twelve years of age, no intellectual disability, good verbal communication skills, and disability related to the medical diagnosis of CP, Spina Bifida or different kinds of muscle diseases.

A semi-structured interview guide was designed to assess issues of the study. Areas included were: type of games played, play environment, and playmates. Example of requests used were: 'Tell me about the type

of games you like to play', 'Tell me what it looks like where you play', and 'Tell me about your technical aids when you play'.

The results show that playing outdoors was considered having fun, but a lot of the children described problems in the environment. It was, for example, difficult or impossible for those who used wheelchairs to get to the playground. Once there, one of the limitations was the surface of the ground, which often was sandy. Many playgrounds had sand on the entire area, which made it difficult or impossible to walk around with a walking frame or to drive in a wheelchair. Several playgrounds were fenced in, which made them difficult to enter with a technical aid. Three children described their accessibility problems in a similar way. One of them said, 'I cannot even get into the playground because of the wheelchair'. Five out of eight children reported that they needed assistance from adults in order to the get on or off the different play equipment (op. cit.).

The design of the play equipment also limited the children's ability to make use of them. Several of the children were afraid when they were on top of the climbing facilities. There was no fence and some of the climbing facilities were very high. It could happen that other children's play on the playground was an obstacle for the children with disabilities. The games played by other children had a high speed and the children switched between the different play equipment all the time. The snow was also a barrier for the children with disabilities. Skar (2002) states that technical aids and adjustment in the environment created the necessary conditions for children with disabilities for a 'normal' life with self-esteem and participation.

The study shows that barriers imposed by the play environment may severely limit the children's opportunities for free play. For the most part, buildings and playgrounds have been constructed to meet the needs of children without disabilities. Skar (2002) goes on to tell us that a playground or a schoolyard that is not adapted to persons with handicaps sends a message that this environment is meant for children without disabilities, and that other children are not welcomed here. It is in this way the physical environment can welcome or exclude certain groups of individuals.

Preschoolers with and without disabilities

English, Goldstein, Shafer and Kaczmark (1997) investigate the effects of alternative strategies that included pairing four children with disabilities with several trained peers ("buddies") during a variety of activities across the school and teaching interaction skills to both children with and without disabilities.

The promotion of friendship development for children with disabilities is considered a primary educational goal. Peer-mediated interventions have been used successfully to increase social interaction between children with and without disabilities, although implementation has usually been restricted to play time (op. cit. p 230).

From the study two questions arose:

1. What are the effects of peer intervention on the social interaction of preschoolers with moderate developmental disabilities when paired daily with more than one trained peer?
2. What are the effects of supplemental dyadic intervention (i.e., follow-up training with both members of a dyad) on the social interactions of peer-target child dyads?

The results showed that interactions between children with and without disabilities increased significantly after peer training, and that supplemental dyadic training resulted in minimal increases in responsiveness on the part of children with disabilities. This intervention appears to be a useful approach for promoting peer interactions, a prerequisite for the development of friendships in integrated preschools. Typically, children can be effective mediators of intervention when taught to use social strategies such as establishing eye contact, asking a child to play or share a toy, suggesting play ideas, describing their own or other children's play, and being responsive to the play of classmates with disabilities (English et al., 1997).

Football participation in the primary school playground

In addition, Smyth and Anderson (2001) intended to show in this study whether children with movement impairments are more isolated than

others on the school playground. Another question was if they play team games such as soccer less often than others. The goal of Smyth and Anderson's **(**2001) investigation was to examine whether early co-ordination impairments were related to later soccer participation on the school playground.

The participants were 64 boys, 32 in a movement-impaired group and 32 in a non-impaired group. They were divided into groups of those who were often alone and those who were not. The not-alone group was further subdivided into those who played soccer for considerable periods and those who did not. There were 10 boys with poor scores on the Movement ABC who were not often alone and who played soccer for considerable amounts of time.

Each child was observed on ten separate occasions, spread over two weeks. Matched pairs were observed as closely together as possible and at the same times of the day.

Analyses indicate that the balance subscale was significantly related to participation in soccer, but that some boys with relatively poor balance scores did play soccer. Only extremely poor performance on the balance tasks of the Movement ABC was related to non-participation in soccer. Some of the key differences between groups of children with movement impairments in terms of their inclusion in social and physical games like soccer may not relate to hand/eye co-ordination and manual control. They may rather relate to the ability to remain standing while carrying out other movements, particularly when balance skills are extremely poor (Smyth & Anderson (2001).

Smyth and Anderson's **(**2001) results show that time spent playing soccer is not a pure measure of either ability or effort. A child with good soccer skills may play soccer a lot, but so may a child who is highly motivated and keen to play. Some of the outcome of early motor impairment may be related to motivation and effort; some of the boys in the DCD (Developmental Co-ordination Disorder) group spent considerable amounts of time alone, and some did not. Some of those who were not alone on many occasions played soccer a great deal, and some did not. Previous analyses have indicated that although DCD boys as a group were both more alone, and played less soccer, this does not apply to all DCD boys. Some were engaged in soccer, which is a highly regarded social and physical activity, for a large proportion of the time.

Having very poor balance was strongly related to lack of participation. These children were excluded from the most active and social activity for boys in these playgrounds (op.cit).

Outdoor play as a diagnostic tool

Outdoor play can also be used as a diagnostic tool. Watkinson, Dunn, Cavaliere, Calzonett, Wilhelm, and Dwyer (2001) looked at the engagement in playground activities as a criterion for diagnosing developmental co-ordination disorder. The purpose was to develop a valid protocol for use by physical educators in assessing whether children suspected of having developmental co-ordination disorder (DCD) meet the American Psychiatric Association's (1994) diagnostic criterion of interference in activities of daily living when interference is defined as culturally sub-average engagement in activities of daily living in physical play (ADL-PP) on the playground. Participants were 136 children (75 girls, 61 boys) from grades one to four at three elementary schools in Canada.

This study has presented a protocol for determining the activities of daily living that are specific to a meaningful cohort, i.e. a classmate, and for identifying children who meet a criterion of interference in activities of daily living in physical play on the playground. However it does not indicate what led to withdrawal or exclusion. The protocol only identifies children who may have lack of competence (Watkinson et al., 2001).

Playground interactions for children with special needs

Nabors and Badawi's (1997) experience is that very young children in need of special support are likely to be placed in inclusive educational settings with their typically-developing peers.

Forty-five typically-developing children and 19 children in need of special support, ages three to five, were observed interacting on the playground. Observers recorded three types of play engaged in by the

children. These included: playing alone, playing with a teacher, or playing co-operatively with a peer.

Children with special needs were observed playing alone or with a teacher more often than with their typically-developing peers. Results of this study provide information about the types of play engaged in by preschool-age children in need of special support and their typically-developing peers on the playground, which is a useful setting for studying the social interactions of young children. These results are similar to those presented by researchers who have examined the co-operative interactions of preschool-age children with special needs in the classroom. Children with special needs often have more difficulty communicating and interacting with their peers compared to their typically-developing classmates and would benefit from interventions to increase their involvement in co-operative activities (Nabors & Badawi, 1997).

The results indicated that teachers used some effective interventions to increase the involvement of children in need of special support in playground interactions with their peers. Two of their most successful strategies included finding a role for a child with special needs in ongoing play and encouraging other children to participate in a teacher-directed activity with other children who had special needs. Children in need of special support often engage in one-on-one play with their teachers. Teachers than have an opportunity to promote play between children with and without special needs (op. cit.).

Nabors and Badawi (1997) have some suggestions that playground equipment and structures should be designed to be user-friendly for children who have physical or other types of impairments. Teachers and therapists should develop activities that invite co-operative play between children.

How children learn and develop through movement, play and sensory experience

Hendy's (2000) opinion is that a well-developed playground in a park or school setting can greatly enhance children's overall development. Making playgrounds more than just fun playgrounds offers children opportunities to develop physically, mentally, and socially, improving academic readiness as well as overall health. Hendy (2000) discusses the importance of movement, how children develop movement through play, and how physical and mental strength develop.

During development, children first learn to walk on a level surface and then progress to an incline plane or ramp, just as they will crawl up a stairway before they learn to walk up it. A ramp or a wide enclosed stairway with handrails on both sides is an easy means of access for most children. As humans, we develop physical and mental skills in sequence, which begin long before birth. When a baby moves in the uterus, he/she is not just changing positions because he/she is uncomfortable. The baby is actually beginning to develop movement patterns. Turning or spinning helps to develop the inner ear, which corresponds to our sense of balance and depth perception. It also relates to how we see things, our ability to track objects, and eventually our ability to read (Hendy, 2000).

Environmental socialization

Bixler, Robert, Royd, Myron and Hammit's (2002) studies attempted to clarify the relationship between childhood play experiences in wild environments and later environmental preferences in the life domains of work, leisure and school.

The authors conducted two studies with adolescent youth (N=1,376, N= 450). The studies intended to help to clarify the relationship between childhood play experiences in wild environments and later environmental preferences in the life domains of work, leisure, and school. Respondents who reported having played in wild environments had more positive perceptions of natural environments, outdoor recreation activities, and future indoor/outdoor occupational

environments. No significant differences were found for preferences for environmental sciences activities conducted in schools. Results suggest that childhood play in wild environments is related to environmental competencies and preferences but not necessarily to an intellectual interest in environmental sciences or environmentalism.

The aim of this study is to examine whether childhood play experiences in natural environments have effects broader than merely stimulating environmentalism.

Bixler et al. state that childhood play in wildland environments combines exploration and play. Exploration helps children develop pathfinding skills and provides a sense of autonomy from adults, particularly parents. Childhood play also provides sociocultural rewards gained from developing competencies in wild environments. Humans are social creatures, learning from each other, negotiating the meaning of events, and seeking social approval. Children have access to wild areas partially as a function of parental approval and facilitation. Peer influences are also important and may be a significant positive influence if the parents are disinterested in wild areas but do not outright forbid play in wild areas.

Two studies were conducted with public school students, one in the southeastern United States and the other in Texas. In both studies, respondents were presented with a list of play environments and asked to rate on a five-point scale (0 = never, 4 = very often) how often they played in different common outdoor environments before the age of ten.

The results show that in comparisons of environmental perception and activity preferences between WA (wildland adventures) and YA (yard adventures) there is clear support for a relationship between reported childhood play and exploration in wildland environments and later preferences for wildland-dependent activities. The initial impetus for this analysis was findings by researchers that memorable childhood play experiences in wild environments helped shape later adult interest in environmental activism. Results from this analysis support the idea that childhood play influences later interest in wildlands, environmental preferences, outdoor recreation activities, and occupations in outdoor environments (Bixler et al. 2002).

They also found that although environmental attitudes and activism were not directly measured, there was little indirect evidence among the

results for a relationship between childhood play in wildlands and environmentalism. Play in wildland environments has a significant effect on environmental preferences and activities but not necessarily on environmentalism. WA had a greater interest, or willingness, to try motorized outdoor recreation activities than YA in both studies. They had, for example, significantly higher scores for a preference for golf.

Day nursery determines children's play and development

Another interesting case study conducted by Grahn, et al. (1997) show that the playground of the day nursery largely determines children's play and thus affects development of their motor function and power of concentration. The study has been performed in a small town and in a city. Two day nurseries were chosen, both with good reputations. The children's parents had similar socio-economic background and both groups of staff were very ambitious and well trained. The difference was that one day nursery was a regular city day nursery while the other was a day nursery where the children spend a lot of time outdoors. One playground had a traditional modern layout, a little more generous as regards paths and bicycle paths and the choice of plants. The other day nursery was run on the basis of the "Outdoors in all Weather" educational philosophy which means, that children spend far more time outdoors than in the traditional day nursery. Grahn et al. wanted to study children's behavior as a whole; they wanted to test the development of the children's motor functions over one year, as well as their power of concentration. They also wanted to see how children play and where they play. A note was made when the children were absent due to sickness. The results show that for the city day nursery it was 8.0%, which is normal for day nurseries. For the "Outdoors in all Weather" it was 2.8%. The difference was significant. It was constant and uniform over the year and it may be considered to be statistically verified (op.cit).

The children's powers of concentration were measured with ADDES, a test developed in the USA. The test was easy to use and Grahn et al. taught the nursery teachers. In this way the children could be observed every day throughout the period without interruption. The results are expressed in terms of mistakes per week per child. Thus the higher the

value, the more unconcentrated the child is. The ADDES test has 27 variables that are associated with six types of concentration capacity. The results of the test show large and statistically verified differences to the advantage of the children from the “Outdoors in all Weather” day nursery.

The motor tests was comprised of ten elements, mainly in accordance with Eurofit, a test devised and recommended by the European Council in 1993. In all ten elements the “Outdoors in all Weather” day nursery children did better. This applied in particular to balance, the ability and strength of the hands, arms and trunk. Climbing and playing on uneven ground as contrasted with playing only on flat ground without trees – this appears to have a pronounced influence on children (op.cit).

Grahn et al. (1997) found that wilder nature makes play more imaginative. At the “Outdoors in all Weather” day nursery the games were more varied. What was important was that the games had a beginning and an end that the children in most cases decided on themselves. The objects used in play could also be left outside, so that some games could go on for more than one day. The children disturbed each other very little, so that those who wanted to could be on their own. At the city day nursery the dominant activity was cycling. Play seldom got to a stage where roles and action had a lot of scope. Play was interrupted, either by other children who disturbed it, or by the staff. Cleaning up was an important element. Nothing could be left outside. Children who wanted to be on their own went to the outer edges of the playground, but a cycle patrol rushing by soon caught up with them. It was more usual here that the staff stepped in when there were conflicts (op. cit.).

Natural environment as a playground for children

Fjortoft (2001) investigated how play in the natural environment by three Norwegian kindergartens might stimulate five- to seven-year-olds’ motor fitness, focusing on the affordances of the landscape for versatile play. She found that children using the forest as a playscape performed better in motor skills than children on a traditional playground. Play activities related to the affordances of the vegetation and topography.

The aim of the study was to investigate how children's playing in the natural environment might stimulate their motor fitness, and it was decided to focus on the affordances of the landscape and the correlation for versatile play. The main objectives were: to focus on the affordances of the landscape for versatile play and to examine the impact of outdoor play activities in children's motor ability and mastering (Fjortoft, 2001). An experimental study was carried out with five- to seven-year-old children in kindergartens in Telemark, Norway. Because of the lack of randomization, the study was characterized as quasi-experimental. The groups were selected from three kindergartens with children equal in age. The experimental group of 46 children from one kindergarten was offered free play and versatile activities in the forest next to the kindergarten. The experimental group used the forest every day for one to two hours throughout the year when they attended the kindergarten. They used the outdoor playground inside the kindergarten fence only randomly. As the reference group 29 children of the same age groups from two kindergartens in the neighboring district were chosen. Both groups were tested with the EUROFIT: European Test of Physical Fitness, the Motor Fitness Test (op.cit).

This study has described the relationship between the structure and functions of a natural landscape, its affordances for play, and the impact on motor development in children. A significant relation between the diversity of the landscape and its affordances for play was indicated. As the child perceives the functions of a landscape and uses them for play, the landscape might have a functional impact on children's behavior and play performance. The physical diversity increases the opportunities for learning and development. The motor fitness tests showed a general tendency that the children using the forest as a playscape performed better in motor skills than the children who played on the traditional playground. It is reasonable to conclude that it is the independent variable "playing in the forest" that affected the dependent variable "motor fitness" (Fjortoft, 2001). Fjortoft also mentions the study carried out by Grahn et al. (1997) and points out that it showed a similar correlation between the physical playscape and motor abilities. The study design described above in Grahn's study was more like a case study including two kindergartens with different outdoor playgrounds. The EUROFIT Motor Fitness Test was applied as well and the results

showed a significantly better performance in the natural play area group than in the traditional group.

In Fjortoft's study significant effects were found in balance and coordination abilities. These are competencies that are of great importance to the children's general mastering of their own bodies in relation to the physical environment. There is a strong relation between the structures of the landscape and the functions of play. The forest itself represents an environment for play and learning that stimulates motor development in children (Fjortoft, 2001).

Playgrounds fit for children and children fit for playgrounds

Sutterby and Frost (2002) warn about a potential epidemic of obesity among children in the United States and urge early childhood practitioners to provide outdoor play that increases children's physical activity, muscle strength, and coordination. They maintain that playgrounds should offer a variety of equipment that challenges children at different ability levels. And they think that teachers' and parents' active involvement is needed to help children become physically fit. Opportunities for outdoor play aren't what they used to be, and children are suffering in the United States.

Sutterby and Frost (2002) state that children adjust their level of activity to their environment. They burn more calories playing outdoors than they do playing inside. In larger spaces children move more than in smaller ones and they learn activity patterns fundamental to succeeding in motor activities and to protecting themselves from hazards. Children learn activity patterns from older children and from adults who model and encourage movement and physical activities. Some adults view playgrounds as a standard collection of large, fixed equipment. Sutterby and Frost think that large structures are important for children to be physically active and learn motor skills, but fixed equipment is only one component of a developmentally based playground. Playground equipment enhances children's natural desire to climb and to challenge themselves. Equipment commonly found on today's playgrounds urges active play by giving children a variety of choices for accessing, negotiating, and descending.

Sutterby and Frost conclusion is that physical activity is an important component in developing the whole child. Reversing the decline in children's fitness will require concerted action throughout society. Early childhood educators can provide daily opportunities for children to increase their physical activity. Administrators and directors can demonstrate their commitment to fitness by encouraging teachers to offer children outdoor play opportunities and improving the health of tomorrow's adults.

Climbing

Readdick and Park (1998) address the importance of climbing in early childhood and issues of facilitating children's climbing skills. They consider why children climb, when they learn, how they climb, how to socialize the climbing child, and how to create safe, developmentally appropriate climbing environments for children. Climbing is a central motor achievement for the developing child. Children, in fact, learn to climb before they begin to walk and continue to climb throughout their early childhood years.

When asked why they climb Mount Everest, mountaineers have declared, "Because it's there!" Young children, it seems, climb trees and fences and furniture because they're there too. It is established that certain objects "call for" certain behavior. Children as young as eight months old have been observed to climb. A developmental pattern is confirmed in observations of young children climbing a variety of structures indoors and out. Climbing, unlike running, skipping, or rolling, involves vertical movement (Readdick & Park, 1998).

Playing with mathematics

Another way of conducting research is to let the children investigate their world themselves. Brahier and Brahier (1996) let the children in grades three to four collect, analyze, and represent data in order to determine which piece of playground equipment appears most popular.

Children in grades five to six investigate the geometry of playground structures using measurement and scale models.

The authors state that a mathematical investigation is defined as a collection of worthwhile problem-solving tasks. The ideas presented in this study have been field-tested in various classroom settings. Focus is on the use of data collection and analysis to study a playground and its equipment. The tasks are open-ended to allow students to choose their own methods for exploring and reporting results. The investigation for grades three and four challenges students to collect data for a week to determine which piece of playground equipment at their school or local park seems to be the most popular. The investigation for grades five and six invites children to select one piece of playground equipment and collect measurements to study the geometry of that structure. Both investigations require collecting and analyzing data and presenting results to the class (op.cit).

The results show that the playground offers a fertile ground for the cultivation of mathematical investigations. Brahier and Brahier (1996) think that it is a method that can increase development if students are to explain what they learned about their playground from this experience and encourage them to raise similar questions about the world around them throughout the school year. Often, the best mathematics problems to pursue in the classroom are those that are chosen by the students themselves (op. cit.).

Supporting constructive play outdoors

Wardle (2000) describes constructive play and its importance to young children. Francis calls for addressing the challenges of miscellaneous articles outside and reversing current trends that discourage outdoor constructive play.

Wardle (2000) states that constructive play involves manipulation of materials to create things. The materials can include sand, art materials, water, woodwork activities, sticks and stones, and a variety of different sizes and different types of blocks. Constructive play is the kind of play children engage in when building, creating, making and constructing. It differs from purely motor play in that children are doing something with

the materials like using mud and water to create mud pies, digging in the sand to create tunnels for little cars, siphoning water out of the water table to fill the bucket. And constructive play is the kind of play children engage in when moving dirt from one area to another, collecting rocks in the wagon, and building a fort, says Wardle (2000).

Environment in Dewey's educational ideal

Rivkin (1998) examines the importance of the natural environment in Dewey's educational philosophy and the role outdoor play and activity have in children's education today. Rivkin highlights the fact that experience is central to Dewey's educational philosophy. To environmental educators, outdoor experiences have key importance. Rivkin (1998) asks what Dewey says about outdoor experiences. Her answer is that Dewey considered the outdoors as given and valued it immensely.

Rivkin (1995) found in her study of conditions for children's outdoor play that the following things were encouraging. The first was the existence of the numerous schoolground improvement organizations. National groups include *Learning Through Landscapes,* which has improved playgrounds in more than a third of Great Britain's elementary schools, adding features such as ponds, orchards, meadows, nature trails, birdfeeders, and sundials. In Canada, the *Evergreen Foundation* has a rapidly growing schoolyard habitat program that has improved more than 400 schoolgrounds. Sweden has two national playground improvement organizations. In the United States, various groups help schools improve their yards; the *U.S. Fish and Wildlife Service, State Departments of Natural Resources*, and the *National Wildlife Federation* all help in adding flora, fauna, and ponds.

Children's gardening is a second pursuit supported by a variety of organizations. Involving children in growing food follows Dewey's practical spirit. *The International Association for the Child's Right to Play (IPA)* is a staunch advocate for children's playspaces worldwide (Rivkin 1998). Rivkin also points out that the outdoor spaces that served as the starting point for motivating children in Dewey's ideal school need to be restored. Rivkin referred to Dewey (1990) that said: "There is

no mystery about it, no wonderful discovery of pedagogy or educational theory. It is simply a question of doing systematically and in a large, intelligent, and competent way...[what homes should but cannot do]" (p 35).

Planning and organizing the playground

Provide planned outdoor environments

Packer, Isenberg and Quisenberry (2002) state that we must provide appropriate, planned outdoor play environments because outdoor play provides many benefits for children. The Association for Childhood Education International (ACEI) recognizes the need for children of all ages to play and affirms the essential role of play in children's lives. The time has come for strong support of play for all children. Play is an essential and an integral part of all children's healthy growth and development.

Large muscle play, often impossible or impractical indoors provides children with opportunities to expand their activity. To encourage curiosity and creativity, playground environments should allow children to explore, build, climb, hide, and move about. While some commercial equipment may be useful, materials such as tires, lumber, telephone poles, railroad ties, cable spools, scrap pipe, barrels, and boxes can also be used to build suitable play structures (op.cit.).

Packer, Isenberg and Quisenberry (2002) think that equipment that allows increasingly complex use is most functional. Children should be able to build temporary structures on the playground. Older children should have adequate tools and fewer restrictions for building forts and models. They should have ample opportunities for climbing on ropes, ladders, nets, and trees. Adaptation may be necessary for children with special needs, such as physical disabilities or attention disorders. Playgrounds should include a sloping area, large sand areas, and areas for digging. While climate may restrict some outdoor activity, playgrounds should be planned for utilization throughout the year. Water play should be encouraged in warm weather and snow activities in cold

weather. If space permits, gardening and animals add an important dimension to children's outdoor play activity (op. cit.). The authors state that outdoor play is significantly different from indoor play. The outdoor environment permits noise, movement, and greater freedom with raw materials, such as water, and construction materials. When challenging playground equipment is available, outdoor play offers children the opportunity to increase physical activity, and thus develop muscle strength and coordination.

Researchers in Portugal are also concerned about children's outdoor play. For Pereira, Fale, and da Guia Carmo (2002) the main goal was to identify, describe, and compare playgrounds in six districts in Cavado in the North of Portugal. They point out that playgrounds are important for the motor and social development of children. In Portugal the design and safety of playgrounds are presently being discussed. The International Convention of Children's Right to Play emphasizes children's right to play all over the world. For these reasons Pereira et al. think it is necessary to develop an investigation on this matter. They want to know about the accessibility of play areas for children and the opportunities they have to play and to have qualified and safe playgrounds. With this study they want to define a basic line and to know what the needs are. They collected the data with a questionnaire that was answered by the political or technical staffs of the six Town Halls included in this study. This information was complemented by interviewing technical staff and by direct observation (op. cit.). The main objectives of this study were to identify, enumerate and characterize playgrounds in the region of Cavado, in the North of Portugal, and compare its six districts. The objects of this study were playgrounds open to the community in the districts.

Pereira et al. (2002) have some conclusions and recommendations on playgrounds. After having analyzed the six districts of Cavado in the north of Portugal concerning the number of playgrounds per 1000 children from 0 to 14 years of age, Pereira et al. can see that there is an average of one playground for 2000 children. However there is a district with one playground for about 2500 children and another district with one playground for about 5000 children. The district with more playgrounds per 1000 children has one playground for about 500 children. They think that this first conclusion should lead the local

governments to think of a more adequate policy of playground planning, because the playground is one of the few public playspaces for children. Another conclusion points out the lack of an inventory of these infrastructures. Children in urban areas have an easier access to playgrounds than children in rural areas. There is less than one playground in rural areas to three playgrounds in urban areas, although there are more children in urban areas. Child policy seems to concentrate playgrounds in the urban areas and some local governments seem to forget the rural area. Pereira et al. (2002) have some recommendations:

- In the planning of playgrounds it is important to select a multidisciplinary team, including people like architects, engineers, psychologists, sociologists, technicians in physical education, local security officers, children and politicians.
- It is important to study the location of the playgrounds according to the mobility and living areas of the population;
- It is important to account for the birth rate;
- It is important to plan the areas and equipment according to the number of children.

Different needs in different parts of development

An important question highlighted by Frost (1997) is that the most pressing need in planning play environments is understanding the nature of play and its importance in children's cognitive, social, language, and motor development.

Different aspects are needed, however, for different age groups and Frost (1997) tells us that the preschool child has generally developed beyond the toddler in physical appearance, height and weight, levels of activity, refinement of motor skills, thinking processes, and knowledge of events. Their motor skills allow them to gain access to previously forbidden or inaccessible places. Preschool children engage primarily in gross-motor play, make-believe play, and construction play. Consequently, their playgrounds should be equipped and zoned for such play.

Primary-grade children continue to engage in motor exercise play, make-believe play, and construction play, and therefore they need materials and equipment to support such play. In addition their maturity levels and interests are leading to a growing interest in organized games like hopscotch, basketball, chase games, rough and tumble, and soccer. Most public schools and municipalities focus exclusively on equipment for exercise play and organized games. Frost (1997) thinks that this is a major oversight, because the child in the primary grades needs continuing play stimulation for cognitive, language and social development as well as motor skill development.

The upper elementary child's passion for order increases and organized games with rules dominate play, especially for boys. This, of course, signals the need for even more spaces and equipment for varied types of games, such as soccer, basketball, skateboarding, ice and inline skating. Although they no longer show intense interest in make-believe play, interest in construction play and work/play activities depends largely on whether storage facilities are available to house a wide array of portable materials to support these forms of p1ay and whether adult play leaders are available (Frost, 1997).

Can playgrounds be improved?

Swings, slides, and jungle gyms have been playground staples for generations of children to exercise and develop their motor skills on (Lovell & Harms, 1985). Lovell and Harms' opinion is that outdoor play can contribute much more to children's development, when planned as an integral component of the total learning environment. Although the expansion of motor skills remains an important goal, outdoor playspaces can also contribute to children's cognitive development, enhance communication and social skills, and give children both a sense of independence and positive self-image. Lovell and Harms (1985, p 3) state that we need to plan ahead to design and equip playgrounds that reach their maximum play value for children. They state that:

1. Equipment must be age-appropriate for children's large muscle development. Activities include balancing, throwing, lifting, climbing, pushing, pulling, crawling, skipping, swinging, and riding.
2. The outdoor play area facilitates refinement of social skills. Playground design and choice of equipment encourage children to take turns, co-operate, share, and plan together.
3. Children are challenged to solve problems outdoors using both physical and social skills. For example, children might lift heavy objects with a pulley or negotiate opportunities to use an especially popular area.
4. The outdoor play area enhances understanding of concepts of relationships such as in/out, up/down, over/under, high/medium/low, heavy/light, hard/soft, and fast/slow.
5. Creativity is encouraged outdoors through art, carpentry, music, movement, and block-building.
6. Children advance their physical knowledge about the natural world through changes in the weather, planting and harvesting, caring for pets, balancing themselves or objects, observing relationships between distance and speed, and experimenting with volume and shape.
7. Children grow in their understanding of the social world by recreating adult work roles in dramatic play such as firefighters, families, garages, and hospitals.
8. Children see the outdoor environment as a comfortable setting in which to eat, paint, read, and engage in other activities.

Lovell and Harms (1985) ask the same questions as we do today in 2004: Can a minor change, such as the addition of a storage shed, make equipment more accessible? Will the daily schedule need to be revised to allow for more time outdoors? Can teachers spend more time interacting with children rather than supervising them? Or will the expansion of the outdoor play environment become a priority? Will fundraising be necessary? How will the area be redesigned? How can the children continue to use the area when extensive renovations are taking place? How many years does it take to achieve the ideal outdoor area for the program?

Playgrounds for school-age children after school

Wardle (1997) argues that playgrounds must provide all children with opportunities for physical, social, constructive, dramatic, and game play. Wardle suggests that considerations include playground regulations, safety, age appropriate areas, accommodation of children with physical disabilities, materials selection, construction, available manufactured play equipment, shade, and evaluation of older playgrounds for safety and remodeling.

Outdoor play provides the opportunity for more and different kinds of play than occur indoors. The conclusion is that as home and neighborhood opportunities for outdoor play decrease, early childhood programs are trying to provide appropriate outdoor environments. But young children need opportunities to experiment, take risks, exercise, engage in social activities, and learn basic concepts about nature and the outdoors. Outdoor playgrounds need to be safe and durable, but Wardle (1997) points out that playgrounds also need to approximate the fantasy, delight, and mystery of the outdoor environments.

Wardle (1998) notes the increase in after-school programs for school-age children and discusses ways to meet the outdoor play needs of this age group. He stresses the need to recognize the unique physical, cognitive, and social needs of school-age children and offers suggestions for developing or modifying playgrounds to meet those needs. He reports that after-school programs for school-age children use a variety of ways to meet outdoor play needs. These include using existing school and city playgrounds, sharing child care playgrounds, and creating play areas specifically for the program.

Wardle's (1998) suggestions here are designed to help programs using any of these options, among with other creative solutions. Wardle states that because school-age programs often use playgrounds designed for other programs this is a critical concern. What makes it even more challenging is the age range of children in typical school-age programs. School-age children's physical abilities differ from those of preschool children. They also have different play needs. But playgrounds designed for preschoolers do not work with this age child.

American playgrounds have gone through an evolution from metal, gross motor, and functional equipment on concrete or asphalt pads to

contemporary playgrounds of linked structures, slides and monkey linked structures. They are moving from the physical play of climbing, running, crawling, and swinging to specific challenges like overhead rings and bars; they are progressing from co-operative play (Wardle, 1998).

One important aspect that Wardle inform us about is that school-age children need a physical space they can call their own and this space should not include the toddler or preschool area within it. It may be a totally separate. He states that school-age children should never use younger children's equipment and younger children should not use the school-age equipment.

It is critical to recognize that school-age children have physical, cognitive, and social needs that differ both from preschoolers and older children. Even though there are a vast diversity of school-age programs and physical facilities, it is possible to design and modify playgrounds to meet the needs of this unique age child. Preschool equipment can be made more attractive to school-agers by increasing the physical challenge (Wardle, 1998).

Play, sports, and environment

This study conducted by Bloch and Laursen (1996) offers an evaluation of a sports playground opened in 1991 in Copenhagen, Denmark. A gap is identified between the planners' intentions and the behavior setting that actually emerged at the playground. Bloch and Laursen (1996) report that research on the relationship between human activity and environment has been dominated by an assumption that there is a simple causal connection between environment and modes of activity. Concerning sports, it has been argued that new spatial configurations of sports areas will lead to new activities, and new types of playgrounds will inspire new forms of children's play. In this article Bloch and Laursen (1996) argue that this traditional view must be modified by incorporating two points. In order to understand the relationship between a particular environment and the kinds of activities that take place in it, it is important to look at the development of a behavior setting. It is also important not to focus on the playground or sports area alone, but to look

at the neighborhood in which the sports areas and playgrounds are located.

Playgrounds have been built in an attempt to compensate for lack of places and possibilities to play in cities. Bloch and Laursen (1996) state that the reason why playground planners are not as successful as they could be is that there is no direct causal relationship between environment and children's play. Playgrounds can be planned and built, but the actual behavior setting of a playground is influenced by many different factors. They are also attracted by other possibilities of play in the neighborhood. If the alternative possibilities of play in the neighborhood are satisfying, children will not be interested in playgrounds.

The study shows that the planners' vision of the sports playground as a local meeting place where children and adults can engage in a variety of play and physical activities has not become a reality. Instead, the sports playground acted as an effective part of the schoolyard. Bloch and Laursen (1996) ask why the children and adults didn't develop a behavior setting that was in accordance with the planners' intentions. They say that the question cannot be answered by assuming a direct causal link between environment and play activity. Ecological psychology may be used here to enrich the planning of behavior settings by drawing attention to how the target group perceives the already existing structure of behavior settings. Human activity is not determined by the environment. The relationship between environment and activity is rather a complicated pattern involving many mutually influencing factors (Bloch & Laursen, 1996).

A Dutch elementary school playground

In a study van Andel (1985) compared the effects of the situation before and after physical transformation in the redevelopment of a Dutch elementary school playground. Observations that were made produced data during playtime, and interviews were conducted with all the pupils on their perception and evaluation of the change. A group of adult experts judged the environment before and after the change on aspects of complexity, manipulability, and affordance for different activities. Van

Andel interviewed the designer of the plan and this interview provided information about his intentions and expectations regarding behavioral aspects.

The result shows that children need an optimal environment, both social and physical, for optimal development. The physical environment is the stage for many activities that children like. Each environment offers its users certain opportunities for use or affordances. There is probably a relationship between the amount of affordances and the amount of stimulation a child can derive from its environment. Too few affordances/stimulants in an environment lead to understimulation and boredom, but too many affordances/stimulants lead to overstimulation and confusion. Complexity and manipulability are also important aspects of the physical environment contributing to the amount of stimulation (van Andel, 1985).

The interview with the designer of the playground reveals that after combining teachers' wishes and his own ideas, he made his first sketch, which was further discussed with the teachers. The pupils of the school did not participate in the design of their playground. At first there were plans to involve them in the construction phase of the project, but due to municipality restrictions this appeared to be impossible. The most important wishes of the teachers were for more play equipment and a passage between the small playground and the large one. In addition, they wanted to keep the school garden, and the fence around the whole playground for reasons of supervision. An opportunity for the children to run and move freely was also important (op. cit.).

Van Andel (1985) states that in the interview with the designer it became clearly difficult to talk about the plans, and about his expectations and objectives in terms of the behavior of children. It seems that he was far more used to working with and thinking about physical structures and facilities than about the behavior and the activities of their users. Detailed information on this subject in a form that is attractive to designers could solve this problem. The general objective of the changes was to make the school playground more attractive to children. This objective seems to have been attained when the researcher looked at the reactions of the children in the interviews. Most places that were changed were judged as more fun and safer by the children. The results from the interviews appear to be congruent with those from the

observations. Both the evaluations by the children and their observed behavior did change considerably in reaction to the physical changes in the playground. But the activity patterns of the children are dominated by movement activities both before and after the changes.

The use of natural materials in children's play, despite the importance it can have, does not seem to receive much support. Van Andel (1985) thinks that the interests of the children are sometimes opposed to the interests of adults. There seems to be a difference between the way children and adults experience their environment. For adults the visual, aesthetic aspects are more important; for children the question 'What can I do there?' is a central one. One of the difficult tasks of a designer is to make an environment that is attractive for both groups; to be successful it seems important to co-operate with both children and adults to create a good environment for all (op. cit.).

The importance of children's participation in changing the city

Tonucci and Rissotto (2001) examined the characteristics of the degradation of the urban environment and the costs that this entails for the child's development. They were particularly interested in play experience and autonomous mobility.

Tonucci and Rissotto (2001) discuss the role of the children's contribution to the promotion of real and consistent change in the city. The reasons underlying the recent increase in the number of experiments of children's participation are examined. They highlight the knowledge concerning the needs of younger citizens as an innovative resource in solving the city's problems. The aim is to collect the children's needs and, together with them, to interpret the community's requirements, to obtain from them ideas and proposals for the restructuring. They show how children's participation experiences can lead to the acquisition of a fresh sensitivity and competence by city administrators and technicians. Analysis is made of several proposals made by children in the course of participation experiments followed by the authors in cities in Italy and abroad during 10 years of activities in 'The Children's City' Project. These proposals confirm the children's capacity to identify the city's

problems as they emerge and to propose solutions that are often innovative or useful for all members of the population.

Tonucci and Rissotto (2001) state that public areas have increasingly become places where the automobile has exclusive rights, and the areas have gradually lost their function of a public place. Children pay a high price; they spend most of their time shut up inside closed spaces where they engage in activities organized and controlled by adults. They have extremely limited autonomy, which is markedly delayed considering their age. They have no opportunity to go outside with their friends and play or to share the adventure of the gradual discovery of new places. Children are excluded from the city; their social integration occurs only in places designed for them ad hoc, with friends that they have not chosen themselves, and with adults performing a specific teaching and controlling function. This means that in their play activities the children are not allowed to observe adults' activities and so have less opportunities to acquire knowledge and abilities through observation and imitation (op.cit).

Tonucci and Rissotto's (2001) conclusion is that children can help us. "The Children's Council and Children's Participation in Planning" represent the most significant participation experiments conducted by the Italian and foreign participating in "The 'Children's City' project". Children must be allowed to express themselves and be listened to. One must be willing to take their proposals into account. To allow children to express themselves, to succeed in listening to them and to be willing to take their proposals into account involves a pre-condition. This is to be convinced that children are fully aware of what they want and particularly of what they lack, and that they are capable of formulating proposals.

The result shows that the children's ideas and proposals are precise, and refer to limited areas, often of particular interest and urgency for children. However, if a city administrator takes them seriously, understands them and entrusts them to capable technicians, designers and town planners, Tonucci and Rissotto (2001) think that children can become valuable planning resources for a true transformation of the city, and that this will benefit all its citizens.

Urban playgrounds and their identity

Patton (1996) report on the focus of playground programs in the United States, emphasizing the best physical and social development of children. For the past 10 years, the primary focus on playgrounds has been safety. Patton think that playground safety issues are indeed very important, but equal importance needs to be placed on quality playground programs to ensure the best physical and social development for children.

Patton (1996) ask rhetorically what a playground is, and their answer is that the playground is a recreation area that encompasses program activities, play apparatus, and an open area. It focuses on the physical and social development of children and consists of daily, weekly, seasonal, and city-wide events and activities. Patton state that the playground stood as the chief play center for neighborhoods across America for nearly 100 years. Its identity as an effective means toward meeting the physical and developmental needs of children was heralded in many places. Patton (1996) also think that many of the critical problems facing children today can be directly traced to the elimination of programs and services that were designed to meet their physical and social developmental needs. He continue to say that play is almost the same as life for children. It is their response to the world around them. Children act out what they observe and learn about themselves and the world. In doing so, they express their emotions and personalities. Naylor, Morris, and Gunn (1996) also think that outdoor play is an important and integral part of a high-quality early childhood education curriculum.

Patton (1996) point out that Piaget explained that play consists of responses repeated purely for functional pleasure. Bettelheim defined play activities as those having no rules other than those the player himself imposes and no intended end result in external reality. Play can be divided into two categories, active and passive. Children engage in both active and passive play at all ages. Typically, active play predominates in early childhood and passive play progresses as children approach adolescence, but this may not always hold true. Some children today may prefer passive play watching videos or television to active play because they are not around other children or siblings, who are a large source of interaction and learning (Patton, 1996).

An interesting aspect that Patton (1996) inform us about is that the age of a playground can be determined by the condition of its equipment. In the 1940s and 1950s, playgrounds were relatively inexpensive, containing single-use pieces installed on concrete, asphalt, grass or hard dirt. In the 1960s and 1970s wood materials made a revolutionary change from the traditional. Today's urban playground encompasses many different formats.

The author state that the same emphasis that has been placed on the safety and modernization of playground equipment should also be placed on playground programming. Some of the key factors that should be considered in planning the playground program are program time frame, the approximate number of program participants, the interests and needs of the participants, planned activities, effective implementation and evaluation, activity time schedule, the availability of facilities, and staffing needs (op.cit).

The adult's role, working and playing alongside the children

Freedom or protection and guidance

Betsy (2001) states that the goal of good playground design is to create a space where children can explore themselves and their world with as few rules and as little adult intervention as possible. She points out that there's an old saying about good developmental education, which applies equally to playgrounds: "Provide freedom with a fence around". On the other hand Rittner-Heir (2001) shows that if adults organize the playground it allows children to make use of all seven kinds of intelligence while they are learning out of doors.

Another question that is in conjunction with the thought that children must explore themselves and their world is discussed by Carpenter, Mizwicki, Kennedy, Docheff, Merwe and Robertson (2000). They ask whether the ratio of supervisors to children should be the same for the outdoor playground (learning environment) as for the indoor classroom. Carpenter thinks that the better supervised the children are on the playground, the less likely they are to be injured. He also states that children need a lot of one-on-one attention to acquire motor and manipulative skills.

Enhancing outdoor play with an obstacle course

Griffin and Rinn (1998) want to build an outdoor obstacle course with found materials to enhance static playground equipment and promote developmentally appropriate play activity for 3- to 8-year-olds. They discuss developmental and learning goals of obstacle courses where children are encouraged to help design and build the obstacle course as part of the learning process.

Griffin and Rinn (1998) think that a permanent structure in the middle of the playground is a formidable piece of equipment but they also think that it can be very boring and limiting for children and adults alike. Modifications can be made to the structure, such as the use of a

parachute or ropes and ladders, but there are limitations. These changes require closer supervision by adults. The goal of playground enhancement is not to require more supervision, but to extend the functions of the play area. Preschoolers need assistance putting different materials together. Griffin and Rinn (1998) suggest that the essential goals of obstacle courses for preschool through second grade are to:

- develop a means for children to understand spatial awareness in connection with their own bodies,
- offer adventure,
- enhance gross-motor skills and co-operative skills,
- provide opportunities for experimentation and exploration,
- offer creative and dramatic play,
- enhance positive self-esteem, and
- provide challenges

Outdoor play is independent play

Cullen (1993) observed 40 preschool children in outdoor play areas and interviewed the children about their perceptions of the observed play. The children's teachers were also interviewed. It was found that a significant negative correlation existed between physical play and creative play and that the majority of children perceived that outdoor play was independent and did not require assistance from the teacher. Forty children, 20 girls and 20 boys, were selected from ten early childhood centers from suburbs in Perth, Western Australia. They represented a range of economic backgrounds. At each center one boy and one girl were randomly selected from the rolls of five-year-old groups, excluding children with special needs, and each matched with another girl and boy, respectively.

Results show that if outdoor play is to achieve a range of developmental outcomes, adequate time must be allowed for the outdoor playtime. The low proportions of time spent by some boys and girls in physical activities indicates that it is unlikely that all children will achieve physical objectives or gain confidence in physical skills from a completely free-play program (Cullen, 1993).

Consideration also relates to gender-related differences in play. In this study, few differences occurred in boys' and girls' play when a quantitative method was used as an indicator of gender-related play. When the descriptive narratives of children's play and the children's interviews were taken into account, data indicated clearly that girls' and boys' use of outdoor play areas differ qualitatively. These differences conformed to stereotypes of girls' and boys' play that have occurred in earlier studies. For example, girls were more involved in quiet home-type play in the sandpit while boys engaged in physical forms of play such as digging. The subtle gender-related distinctions in play revealed in the present study emphasize the need for teachers to monitor the quality of play as well as play choices (Cullen, 1993).

This study shows that adults in preschools are more monitorial outdoors than indoors. Cullen (1993) suggests that it is time to adopt a similar perspective with regard to the diverse forms of learning which occur in the outdoor environment.

Gender aspects on outdoor play

Making masculinities and femininities in school playgrounds

Epstein, Kehily, Mac-an-Ghaill and Redman (2001) see school playgrounds as places where struggles for power among groups of children and between children and adults take place. It is a place that many children regard with trepidation. This article is based on an ethnographic study of children's play at break time in two contrasting primary schools in north London. Play in the two schools was differently gendered, because of the different organization of the playground. Epstein et al. (2001) argue that children will use the means available to them to construct gender differences in their playgrounds and that this will frequently involve the reproduction of the hegemonic cultural identities and relations of power. Epstein et al. argue that local interventions at the level of the individual school can and do bring into question such identities and power relations. This can give children ways of being that are more open to possibility and difference.

Epstein et al. (2001) suggest that the geography and spatial organization of playgrounds express gendered power relations. The dominance of soccer and fighting can marginalize not only the girls but also those boys who are not interested in or good at soccer.

In this study they demonstrate that soccer and fighting simultaneously confirm and cut across ethnic boundaries and that many boys become deeply involved in these activities. For these boys, being a "real man" is established through their prowess in both activities, and they gain popularity and status both with other boys and with girls through them. Soccer and fighting become a measure of success as boys/men, and more important than academic success, while relative failure or lack of interest in them becomes a marker of suspected effeminacy or homosexuality.

On the other hand, in a school context where soccer is brought under scrutiny, as in this study, it is observed that boys turn to other activities to establish their masculinity on the school playground (op. cit.). There appear to have been two key factors in the process that allowed this to happen. Epstein et al. (2001) point out a case where the organization of soccer by an extremely popular female teacher meant that boys were

compelled to find other activities during both long and short break times. Girls, though, were enabled to join in the more usually masculine activity of soccer on a more equal footing than often occurs. Second, it fostered the establishment of what looked like a close relationship between the most admired boy and girl in the class, both of whom both were significantly good soccer players (op. cit.).

Skelton (1999) also talks about a passion for soccer and dominant masculinity. The results in Skelton's (1999) study emerge from an ethnographic study of two primary schools, and indicate the ways in which soccer was pivotal to the gender regime of the schools. Soccer did not serve solely as a means of generating male camaraderie; it also defined relationships between males and females in the classroom and took a central place in the classroom management strategies of the male teachers.

Skelton's intention was to explore various dynamics around schooling and soccer. There is a long-standing relationship between soccer and schools. Skelton (1999) points out that much of the literature that links soccer and schooling to social class tends to focus on its significance to the lives of working-class boys. In the same time, the literature suggests that soccer has had an enhancing function to fulfill in all schools. Soccer might provide the potential to exacerbate divisions across ethnic groups and also, promote a hierarchy of ethnic groups. Skelton also points out that soccer is a major signifier of successful masculinity. The conclusions of this study is that structural inequalities such as social class, ethnicity, and gender/sexuality, are reworked in discourses around soccer. The study also shows that a school's commitment to the 'soccer narrative' has implications for other aspects of schooling. The 'passion for soccer' had clear implications for the way in which it positioned itself in relation to the 'market' in education; that is, it was a 'soccer school' and promoted it self as such. The conclusion of this study is that soccer within the hegemonic masculinity of the school had implications for classroom management, and for relationships between pupils and pupils and staff (op.cit).

Interactions between girls and boys

Oswald, Krappmann, Lothar, Chowdhur and von Salisch (1987) examined children's peer interactions in a sample of 52 boys and girls, six to twelve years old, living in a neighborhood of West Berlin, West Germany. The study is based on observations and interviews conducted in the classroom and on the playground. Friendship nominations and quantitative analysis of the interactions confirm the increasing segregation between the sexes.

The result showed when it was more closely examined that 1,100 interactions between boys and girls reveal areas of contact between the sexes in which boys and girls make specific demands of each other. The development of patterns of relating to children of the other sex is examined form the following areas: "helping," "fooling around and teasing," "bothering and rebuking," as well as touching and other forms of physical contact. Analysis suggests that gender-typed behavior not only emerges in same-sex peer groups but also in cross-gender interactions. It is clear from the study that girls and boys confront each other with demands that concern fundamental problems and areas of cross-sex contact (Oswald et al., 1987).

Children's beliefs about playing with girls versus boys

Martin, Fabes, Evans and Wyman (1999) conducted a study at ten child care and after-school care centers. The relationship between children's social cognitions about playing with girls and boys and their self-reported and actual play partner preferences was investigated. The children (N=184, ages 41-82 months) answered questions about their preferences for playing with peers, their beliefs about others' approval for their playing with these children, and their predictions of other children's play preferences.

To assess actual play preferences, 40 of the children were observed in naturally occurring free-play peer interactions. Results showed that children held gender-typed beliefs about other children's play partner preferences, and believed that others would be more likely to approve of their behavior when they played with same-sex than with other-sex

peers. Both of the beliefs were stronger in older children. When asked about their own preferences, children reported strong same-sex play partner preferences, which increased with age. Observations confirmed that young children have same-sex preferences. Children's gender-typed cognitions about play partners correlated with play partner preferences: the more gender-typed the belief, the more the children preferred same-sex playmates (Martin et al., 1999).

Exclusion in girls' peer groups

Harness Goodwin (2002) found in her studies that the playground was frequently both romanticized and overlooked as a place where social relationships based on power and status are played out. She states that many of our models of female behavior are the legacy of a 'two cultures' perspective on moral development and she has investigated children's reasoning about moral situations rather than moral action itself. Different forms of social exclusion in girls' groups call into question the notion that girls are fundamentally interested in cooperative interaction and a morality based on principles of relatedness, care, and equity.

Harness Goodwin (2002) states that we can investigate how morality is lodged within the actions and stances that children take up in interaction with their peers. The argument is based on an ethnographic study of a girls' peer group of mixed ethnicities and social classes in an elementary school in Southern California carried out over a three-year period.

Harness Goodwin (2002) points out that many psychologists examining social aggression formulate the locus of behavior in the individual. Goodwin thinks that conversation analysis, coupled with long-term ethnographic study, provides a powerful methodology for documenting practices in children's naturally occurring, moment-to-moment conversation. Harness Goodwin can in her study position specific interactions within the girls' group to examine the processes through which the social organization of a social group is built. Adults in the school situation acknowledge that males colonize the playing field and are fully aware that males practice aggressive behavior in the midst of games. On the other hand girls' practices of exclusion or relational

aggression are discouraged. Forms of social exclusion and aggression in girls' groups call into question the notion that girls' groups are fundamentally interested in cooperative interaction and a morality based on principles of relatedness, care and (op. cit.).

Harness Goodwin calls attention to Pellegrini's argument in his recent 'call for research' on new methodologies for the study of peer victimization, (1998, p166) that 'the time has come in our study of bully-victim relations to complement self report and laboratory methods with direct and indirect observational methods of youngsters functioning in the natural habitats in which these problems occur.'

Harness Goodwin (2002, p 415) thinks that "we need careful examination of the actual practices that make up the life world of a particular group so it is possible to investigate how morality is lodged within the actions and stances that children take up in interaction with their peers". This will lead us over to the next field, bullying and victimizing.

Bullying and victimizing

Landau, Milich, Harris and Larson's (2001) study was designed to further evaluate adults' understanding and appreciation of childhood teasing. The sensitivity of pre-service teachers to the impact of teasing on children was examined. Pre-service teachers (N = 164) and elementary-age children (N = 184) viewed one of three videotaped responses to an observed teasing incident among children and then evaluated the child actor's response to the teasing and social status of the participants in the teasing episode. Pre-service teachers were asked to respond as they thought children would.

Landau et al.'s (2001) results revealed several important differences between responses of pre-service teachers and children, including how angry participants would feel if they were involved, and the effectiveness of the child's response to discourage subsequent teasing. Results are discussed in terms of their implications for understanding teachers' responses to teasing incidents in the school environment.

Peer involvement in bullying

The focus in this study conducted by O'Connell, Pepler, and Craig (1999) was on peer processes that occur during bullying episodes on the school playground. These processes were examined from a social learning perspective, allowing consideration of the effects of various types of reinforcement among bullies, victims, and peers. Fifty-three segments of videotape were examined. Each segment contained a peer group that viewed bullying on the school playground. Peers were coded for actively joining or passively reinforcing the bully, and for actively intervening on behalf of the victim.

The results are interpreted as confirming peers' central roles in the processes that unfold during playground bullying episodes. Findings are discussed in terms of the challenges posed to peer-led interventions. Peers' anti-bullying initiatives must be reinforced by simultaneous whole-school interventions. Older boys (grades four-six) were more likely to actively join with the bully than were younger boys (grades

one-three) and older girls. Both younger and older girls were more likely to intervene on behalf of victims than were older boys (op.cit).

O'Connell et al. (1999) state that researchers have often overlooked the fact that, like other forms of aggression, bullying occurs within a social context. Children are more likely to imitate a model when the model is a powerful figure. The model is rewarded rather than punished for the behavior and the model shares similar characteristics with the child. In the case of bullying, these conditions are often present. They point out that peers who are present during a bullying episode have the opportunity to observe a powerful figure.

O'Connell et al.'s (1999) observations indicate that bullies are seldom punished for their aggressive behavior. The majority of research into children's aggressive behavior has focused on boys. Boys tend to have extensive, relatively non-intimate playgroups, therefore the conflictual behavior of boys is more likely to involve salient behaviors such as direct physical aggression, yelling, and assertions of status and dominance. In contrast, girls' playgroups tend to be more intimate.

O'Connell et al.'s (1999) study confirms peers' central roles in the processes that unfold during playground bullying episodes. The observations draw attention to the importance of including the entire peer group in anti-bullying interventions. They found that it is important to raise peers' awareness of individual responsibility and empathy for the victim. It is also necessary to provide effective intervention strategies for children, and to encourage them to withstand the dynamics of the peer group. These strategies can mobilize the silent majority to act against playground bullying.

In a new study O'Connell, Pepler, and Craig (2002) also indicate that peers' anti-bullying initiatives must be reinforced by simultaneous whole-school interventions. Landau, Milich, Harris, and Larson (2001) found the same in their study.

Victims and not involved

In Boulton's (1995) study based on peer nominations, 71 boys ages 8-10 living in a large urban area in the UK were classified as bullies, victims, or not involved in this type of problem. These children were then

observed on the playground in order to investigate what activities the three groups typically engaged in and with whom they interacted. The children came mainly from working class backgrounds. The result show that the three groups did not differ significantly in terms of their social networks. Bullies tended to be in larger groups than other children. Victims spent significantly less time in male games than the other two groups, and significantly more time on their own. These results can advance understanding of the development and maintenance of bully/victim status, as well as facilitate schools' attempts to reduce this type of problem. The research findings suggest that bully/victim problems are widespread in many schools in several countries. Boulton explains bullying as a long-standing violence, physical or psychological, conducted by an individual or a group directed against an individual who is not able to defend him/herself in the actual situation (op.cit).

The results show that boys more often report using physical forms of bullying and tend to select boys and girls equally as victims, whereas girls more often report using verbal/psychological forms of bullying and tend to select more girls than boys as victims. Victims tend to be lower on the popularity scale than other pupils, which up until this study has been based on sociometric data based on this convergent evidence; victims appear to lack an important protective factor against their being bullied in the playground (Boulton, 1995).

Boulton (1995) points out that having 'many' close friends could serve to discourage potential bullies from picking on another child. The results also showed that victims were significantly less likely to participate in rule games, and more likely to be engaged in positive social contact with other pupils, especially standing around chatting. Victims also tended to be in smaller groups. But this study also recognizes that eight-ten year-old victims do not form strong cliques with each other. The study shows differences in the playground behavior and interaction patterns of boys identified by their peers as bullies, victims and not involved (Boulton, 1995).

Student-mediated conflict resolution programs on playground aggression

In a study Cunningham et al. (1998) examined the effects of a student-mediated conflict resolution program and playground aggression on a primary school.

Conflicts between peers, bullying, relational aggression, and physical aggression emerge in preschool settings and persist through the elementary, middle, and secondary school years. Cunningham et al. (1998) state that whereas a small group of children are consistently victims of interpersonal aggression, more children are involved as perpetrators, passive participants, or witnesses.

The results show that playground mediation responsibilities reduce opportunities for aggressive behavior. Weekly team meetings and playground dispute resolution provide mediators with problem-solving, communication, and perspective-taking skills, which may assist in the resolution of conflicts with peers or improve responsiveness to adult interventions. Although boys and girls contributed equally to the team's efforts, they displayed distinct preferences; boys intervened in more disputes involving boys whereas girls intervened more frequently in conflicts between girls. Cunningham et al. (1998) think that there are several possible explanations for this finding. First, boys perceived their efforts to intervene in physical conflicts between girls to be somewhat less successful than their efforts with boys. Second, whereas most conflicts between boys were physical, girls were more likely to engage in verbal or relational aggression (op. cit.).

Social networks in school settings

Ladd (1983) has also examined interactions between children. The study conducted in classrooms and analogous settings suggests that popular and unpopular children form their own unique subsystems, and their interactions with peers differ in quality. Behaviors and peer networks of popular, average, and rejected children in a larger and more diverse social setting are assessed. Based on sociometric measures administered in each classroom at two elementary schools in the northwestern U.S., 48 third and fourth graders were selected to represent each sociometric

membership group and were observed during mixed-grade recess periods.

The results show that rejected children spent less time in prosocial interactions and more time in agonistic and unoccupied behaviors than did popular or average children. They also spent more time watching others play. A larger proportion of rejected children's interactions, as compared to those of popular and average children, was conducted in small groups and distributed among younger and/or unpopular companions. Popular and average children were also named as friends by a greater proportion of their frequent playground companions (op.cit).

Sullivan (1998) also found that schools must take responsibility for any incidents and seek to find appropriate solutions. School bullying comes up recurrently in the news media and reflects society's concerns with the larger issue of law and order. Schools are microcosms of the world to come, so there is felt to be a need to intervene and put things right at an early stage (op. cit.).

Structure and the pedagogical process

Pedagogical quality in early childhood education

Sheridan and Schuster (2001) describe a comparative study between Germany and Sweden. Observers from different countries and cultures made parallel and independent observations of the quality in early childhood education. For evaluation of quality, the observers use the Early Childhood Environment Rating Scale (ECERS), combined with a documentation of the perceptual process underlying the ratings of quality with the ECERS. The 20 participating childcare centers, ten in each country, were chosen randomly. The ages of the children in the evaluated childcare centers were between one and five years in both countries. Each childcare setting was visited two times over a period of two continuous weeks by two three-member observation teams representing both countries. Altogether, each unit was evaluated by each of the six observers according to a predetermined schedule with a systematic variation of combinations.

Some of the results concerning play are interesting in this context. The ratings of low and high quality on the item "play" are, according to the criteria in ECERS, dependent on the materials provided. These include time and space to play, pictures, stories, excursions, and experiences used to enrich and stimulate play, as well as the interactions between the teacher and children during children's play. The German team's documentation of the Swedish child care centers concluded that free play is, in many German childcare centers, the prevailing activity of early childhood education. Opportunities for free play were very limited in Sweden. Free play seems to occur in Sweden before breakfast, between the planned activities before noon, and during the outdoor activities. The children use all the space available, both inside and outside, for their play (Sheridan and Schuster 2001).

Preschoolers' play and playground settings

Sook-Young, Shim, Herwig and Shelly's (2001) purpose with this study was to examine different effects of the indoor and outdoor settings on the peer play of younger and older preschoolers. The second purpose of the study was to determine the influence of each play environment on children's play behaviors with peers in different ways. This means that the focus in this study was on examining the relationship between different settings for young children's play behaviors with peers.

Forty-one children from two to five years of age enrolled in three child care programs participated in this study. The children were videotaped for five minutes each on four different days, both indoors and outdoors.

The complexity, variety, and number of playspaces per child for each playground were evaluated by videotaping at two different times – before the children entered the playground and ten minutes after the children entered the playground. Each playground was rated for each measure by the same individuals, using written listings of outdoor playground equipment and materials from one day of videotaping. The Assessment Profile for Early Childhood Programs described the quality of the child care program, and additional measures described the playground setting. Children's play behaviors were categorized using the Parten-Smilansky Scale, which combines social play categories and cognitive play categories into 16 categories of peer interaction (op.cit).

The results showed that the children were more likely to engage in the most complex form of peer play (i.e., interactive dramatic play) outdoors than indoors. In outdoor play, the older age group was more likely to interact with peers than was the younger age group. The outdoor playground offered older preschoolers particular types of play experiences (i.e., functional play and dramatic play) more readily than the classroom. Sook-Young, et. al (2001) state that these findings reinforce the importance of both the indoor and the outdoor environments for promoting more complementary play behaviors and peer interactions.

Previous researchers did not consider the contextual features of each setting. Sook-Young, Shim, Herwig and Shelly pointed out that the kinds of behavior that are elicited depend upon the characteristics of that

setting. Thus, it is possible that indoor and outdoor play environments for children differ in quality and play opportunities. They state that research is needed to consider the contextual features of each setting in order to better understand the relationship of these play environments. The contextual factors are also related to quality of program, such as physical space, curriculum, caregiver-child interactions, indoor and outdoor playspaces, materials and activities, and health and safety (op.cit.).

Commercialization of playspace and the commodification of childhood

McKendrick, Bradford and Fielder (2000) highlight the subject that the growth of commercial playgrounds in the UK is a part of a broader process whereby ever greater realms of children's lives are commodified. McNeal's theory of the social group of children as a market is introduced as a framework through which commercial playgrounds may be understood. An introduction to commercial playgrounds and the project from which the article is derived sets the context for an analysis of how parents and children perceive and experience these environments, how they are marketed to them, and how they consume them (op.cit.).

McKendrick et al. (2000) found that it is simplistic to suggest that these new developments are testimony to the new-found consumer power of children. Children play a marginal role in the production of these play environments. Some groups of children are found to be more active consumers of these spaces. Children with fewer siblings and children without two-parent families are significantly more likely to contribute to decision making. Consumption is not distributed evenly across different types of commercial playground. It is of particular significance that children are more marginal to the decision-making process for family pubs, the domain that has traditionally been the preserve of adults. In conclusion, it is argued that the social group of children is not a primary, secondary, or tertiary market. McKendrick et al. (2000) state that these new commercial playgrounds provide primarily for the needs of adults for themselves and with respect to how they want their children to play and, to a lesser extent, for the needs of children.

McKendrick et al. (2000) think that children are commonly used as icons to mobilize public support for worthwhile causes. The commodification of children's lives is most apparent with respect to play, with the growth in the toy industry and leisure wear. We must ask what the nature of the commercial playground is. According to McKendrick et al. (2000) the term 'commercial playground' is a descriptor that encompasses a range of play environments. It is also instructive to conceive of commercial playgrounds as generating profits by offering opportunities for play in a designated site.

Innovative product design has made possible the concept of an indoor "soft-play" center while outdoor play equipment is designed to meet ever more rigorous safety standards. Most commercial playgrounds are situated indoors. Adult viewing areas are situated alongside the play zones. Many of these play zones, particularly those in non-leisure domains, are small and possess limited equipment, aimed for a 'younger' age group. Equipment tends to be fairly standardized, reflecting its modular construction and equipment supply networks. McKendrick point out that the equipment is packaged and themed to create a brand identity.

McKendrick et al. (2000) came to the conclusion that the growth of commercial playgrounds in the UK is part of a broader process whereby ever greater realms of children's lives are commodified. These leisure environments are marketed to adults and children, with a balance being struck between adult's concerns for safe play and children's desires for exciting play opportunities.

Children are scientists at play

Yet another recommendation comes from Elsohn (2000), who notes that children are scientists at play. Elsohn suggests that successful early childhood science programs include open-ended, free-choice activities, a wide array of equipment, safe supervision and spontaneity and a variety of discovery locations. Elsohn (2000) states that kids are scientists at play. "While they bake mud pies, you may catch them conducting playful experiments". This view of the child support open-ended inquiry and offer a place for discovery.

One question is how we can enrich the outdoor play. Henniger (1994) discusses how outdoor play can be as effective as indoor play in facilitating young children's development. Teachers, administrators and others generally consider playgrounds and the activities that occur there less important than indoor spaces in the lives of young children. Playgrounds and outdoor play experiences have been viewed primarily as an opportunity to develop physical skills through vigorous exercise and play. Further evidence indicates that well-equipped playgrounds can stimulate a variety of types of play, including dramatic play. Outdoor play can be as effective as indoor play in facilitating young children's development.

Henniger (1994) states that with a little effort, playgrounds can move from their current rather sterile status to more stimulating, creative spaces for young children. Most playgrounds would benefit by more variety in available materials and spaces. Movable toys and equipment can make playgrounds into spaces where children can have a greater effect on their environment. Adults need to ensure that children have numerous opportunities for dramatic play outdoors. Children deserve the same diversity and richness in their outdoor play environments as they have indoors.

Henniger (1994) suggests that by carefully analyzing the playground setting and determining what is missing, concerned adults can provide a greater variety of play materials and more opportunities to manipulate materials and nurture dramatic play. By spending more time planning and implementing a more complete playground curriculum, teachers and administrators can help children take full advantage of the outdoor play environment.

Creating a great place to learn and play

Humphries and Rivkin (1998) tell us about an English school that has converted its modest grounds into a unique educational environment. The Coombes County Infant and Nursery School, a semi-rural English school serving 200 children aged four to eight, is situated on a plot packed with such educational opportunities as ponds, flower and vegetable gardens, sheep and chicken enclosures, an outdoor theater, and

wildlife habitats. The asphalt playground is painted with a variety of games and activities. A separate preschool playground has paths, gardens, a play horse, and a storage building.

Creating such a rich environment has been a major undertaking for this school for more than 20 years. Because the children are young, they wanted to create a true “kindergarten” a garden in which children could be close to trees, plants, animals, insects, and birds, and where they could experience natur. The principal’s idea was to soften children’s aggressive behavior by creating a rich outdoor learning environment.

At the end of each semester, the children were asked to draw what they remembered and liked outside. By studying their drawings, Humphries and Rivkin learned several things – that children value what teachers tell them is important; that simple things, such as being under a tree shedding its spring blossoms, often impress children greatly; and that just being outside can make children feel excited.

Can a constructivist approach help?

Nicholls (1998) states that touch, sight, and hearing all play a crucial role for the young child trying to make sense of the science in their everyday environment. Nicholls (1998) explores the need to allow very young children to investigate science concepts from an early age as a way of enhancing cognitive abilities in science and development of investigative skills.

Investigation in science at every level is the process of finding out as much as possible about a particular situation. Science is often the tool used to explore the problem or situation. The constructivist paradigm is not new in science education, and it is one that is often put forward as an acceptable approach. Observation and communication are significant factors in a constructivist approach. Nicholls’ (1998) opinion is that constructivism highlights the crucial role that activity plays in science learning and development. It gives priority to individual pupils’ sensory-motor and conceptual activity. Constructivism allows the analysis of thought to be considered as a conceptual process (Nicholls 1998). Constructivism can be seen as a process that is located within the individual, and is typically concerned with the quality of individual

activity that allows for the development of ways of knowing at a more micro-level. Development includes the pupils' interactive construction of classroom social norms and scientific practices. The constructivist approach is useful to young pupils when investigating science (op. cit.).

Nicholls (1998) points out that children investigate and explore naturally. If we observe young children playing on a beach it highlights this idea. The questions are there from the beginning; children ask what is happening when they dig holes in the sand and fill them with water. Where has the water gone? Why does it do that? Why is there such a great desire to formalize investigations through the curriculum, and can a constructivist approach assist and make the process more personal? (op. cit.).

Nicholls (1998) argued that science investigation for very young pupils should not be constrained by rigid curriculum frameworks, but rather prompted by natural curiosity and the need to know. Investigative skills will develop if young children are encouraged to test their own observations. It is the teacher's responsibility to provide contexts that allow for such development to take place. The curriculum is only a framework to guide pupil learning (op. cit.).

The impact of playground design

Barbour (1999) investigated the impact of the outdoor-learning peer relationships of second graders with different levels of physical competence. She found that playground design influenced children's social- and physical-skill development by facilitating or constraining the strategies they used to manage their play with peers. A theoretical model for these interactions was developed.

Grounded theory procedures were used to analyze observation and interview data. Results indicated that playground design influenced subjects' social as well as physical skill development by facilitating or constraining the strategies they used to manage their play with peers. A theoretical model was developed to describe interrelationships among playground design, physical competence, and peer relationships.

The impact of the outdoor learning environment on the play behaviors and peer relationships of eight second-grade children with differing

levels of physical competence was investigated using a qualitative case study approach. Subject selection was based on performance on the Bruininks-Oseretsky Test of Motor Proficiency. Settings for the study were playgrounds of contrasting design. One of the playgrounds emphasized exercise play, and the other provided various play options (op. cit.).

Playground A was used by pre-kindergarten through eighth-grade children. This playground was crowded closely together within a sandy area bounded by landscape timbers and other play material.

Playground B was rebuilt in 1991 with state-of-the-art playground equipment. The playground was designed for pre-kindergarten through primary-grades children's use. A large play structure incorporated various types of apparatus for active play (op. cit.).

Playground A's playstructure had fewer activity options, fewer routes through which children could travel, and was less accessible for children with limited motor skills than was Playground B's playstructure.

The results show that the play behaviors interacted and peers were influenced by playground design. Barbour (1999) points out that many factors combine to produce children's play behaviors and influence their peer relationships. Barbour (1999) also states that the results indicate that playground design contributed to the children's physical competence. Involvement with materials and equipment in the physical environment affected motor skill development and physical competence.

Barbour (1999) states that equipment, materials, and spatial delineation in outdoor learning environments influence children's physical and social skill development. Each playground promotes or constrains the physical involvement and peer interactions of children with varying levels of physical competence. Several points in this study contribute to an understanding of the impact of playground design. Barbour's (1999) study shows that playgrounds that emphasize exercise play encourage gross motor activity as the means for children to interact with peers. She could also see that these types of physical settings favor children with greater physical competence. The results also show that the play behaviors of children with low physical competence may be constrained inability to participate in certain gross motor activities. Exercise gives children with greater physical competence more opportunities to interact with peers and to acquire social knowledge.

Children with low physical competence are likely to have fewer opportunities for peer interactions. Another interesting finding is that activities supported by the outdoor environment also affect playgroup composition.

Physical competence influences social status and playgrounds that function as arenas to highlight comparative physical abilities may serve to increase competence as a factor in assigning social status. Barbour (1999) suggests that playgrounds that encourage a range of play behaviors are more likely to focus attention on various abilities and they may contribute positively to the status and social acceptance

Playgrounds should accommodate the wide range of development of the children who use them. It is also advisable that playgrounds designed for use by older primary children include playing fields. Barbour (1999) found that children tend to seek a level of challenge that best suits their individual needs. It is important to include equipment and materials that promote the motor skill development of children and provide opportunities to interact socially with peers (op. cit.).

Discussion in terms of future research

A reappearing pattern in this literature review is that of plurality and complexity and also the plurality of methods that have been used. This can of course also symbolize different discourses in different times. It is of importance to state that knowledge is pluralistic, context dependent and possible to develop

A number of investigators have examined outdoor play with different perspectives and methods. One key finding is that it is what happens when children interact that makes their playground powerful and revealing. It is in that context that children learn to engage others, develop conversational skills, and cultivate and sustain friendships (Zinger 2000).

However Shim, Herwig and Shelly (2001) pointed out that the kinds of behavior that are elicited depend upon the characteristics of that setting. Thus, it is possible that indoor and outdoor play environments for children differ in quality and play opportunities. They state that research is needed to consider the contextual features of each setting to better understand the relationship of these play environments. The contextual factors are also related to quality of program, such as physical space, curriculum, caregiver-child interactions, indoor and outdoor playspaces, materials and activities, and health and safety. Sheridan and Schuster's (2001) results concerning play are interesting in this context. The ratings of low and high quality on the item "play" was, according to the criteria in ECERS, dependent on the materials provided but also the time and space to play used to enrich and stimulate play was also of importance.

The literature review revealed that the method that is used produces different kinds of information and different results, for example in Cullen's (1993) study, where few differences occurred in boys' and girls' play when a quantitative method was used as an indicator of gender-related play. When the descriptive narratives of children's play and the children's interviews were taken into account, data indicated clearly that girls' and boys' use of outdoor play areas differ qualitatively. These differences conformed to stereotypes of girls' and boys' play that have occurred in earlier studies. Cullen (1993) suggests that it is time to

adopt a similar perspective with regard to the diverse forms of learning that occur in the outdoor environment. For example Smyth and Anderson's **(**2001) results show that time spent playing soccer is not a pure measure of either ability or effort. A child with good soccer skills may play soccer a lot, but so may a child who is highly motivated and keen to play.

Bixler et al. suggest that additional conceptual and empirical work needs to be done on the social worlds of children with differing play experiences. Further research should explicitly acknowledge and measure the sociopolitical interaction between developing children, peers, and significant adults as they interpret their experiences in the wild places they play in and explore. The findings support the benefits of providing childhood play experiences in wild environments to instill an interest in children in outdoor activities (Bixler et al., 2002).

Pellegrini et al. (2002) suggest that future research should examine the extent to which game leadership predicts school adjustment in later grades. Future research should also examine the effectiveness of policies that foster inter-ethnic interaction. One important result that they have demonstrated is that success in one part of the first grade school day, for example in games at recess, predict more general school adjustment.

Another area of interest that Epstein et al. (2001) highlight is that soccer and fighting simultaneously confirm and cut across ethnic boundaries and that many boys become deeply involved in these activities as the primary signifiers of masculinity. One important question for future research is if masculinity is born on the playground.

An important problem that needs to be further investigated was recognized by Tonucci and Rissotto (2001). This is that children are excluded from the city and their social integration occurs only in places designed for them ad hoc, with playmates that they have not chosen themselves and with adults performing a specific teaching and controlling function. This means that in their play activities the children are not allowed to observe adults' activities and so have less opportunity to acquire knowledge and abilities through observation and imitation.

Prellwitz and Tamm (1999) ask one important question: How should playgrounds be constructed to correspond to the different needs of children? Lovell and Harms (1985) ask the same questions as we do today in 2004: Can a minor change, such as the addition of a storage

shed, make equipment more accessible? Will the daily schedule need to be revised to allow for more time outdoors? Can teachers spend more time interacting with children rather than supervising them? Or will the expansion of the outdoor play environment become a priority? Will fundraising be necessary? How will the area be redesigned? How can the children continue to use the area when extensive renovations are taking place? How many years might it take to achieve the ideal outdoor area for children?

We can conclude in this review that many studies have found what Wardle (1994) discusses, i.e. that improvements in playground design are important. Playgrounds for young children can be further improved by more focus on gross-motor, social, dramatic, and constructive play. Wardle (1994) can see that playgrounds still address primarily only physical play, usually gross-motor play. Social, dramatic, and constructive play are almost totally ignored. Wardle points out that we always seem to lose sight of the primary goals of outdoor play for young children, which include exploration, risk taking, challenge, learning about the natural world, and fantasy. But one issue that ought to be attended to is to clarify the difference in use and outlook between a school playground, a kindergarten outdoor playground and a playground in the community. In this literature review no study was found that made this fundamental definition.

Another interesting issue to be explored concerns the quality of friendships across settings. It is important that future research consider the nature and quality of friendships and observe interactions among friends (Ray, Cohen, & Secrist, 1995).

As Pellegrini and Blatchford (2000) mentioned, the paucity of research on children's games may relate to the availability of and access to a research sample of young children at a time when they typically engage in games. Primary school children are less accessible for study and offer fewer opportunities for observations of peer interaction, as much of the primary school day is tightly scheduled around regimens of solitary and sedentary academic work.

As Zinger (2000) mentions, specific attractions and games provide the content of playground life, but it is what happens when children interact that makes their playground activity powerful and revealing. It is here that children learn to engage others, develop conversational skills, and

cultivate and sustain friendships. It is also where children can exchange information, ideas, jokes, gossip, and opinions.

We have to search for models that exemplify the concept of children as active co-constructors of knowledge and culture within their own identities as people and learners. The answer is, as Anning (1999) stated, that the image of the child is rich in potential, strong, powerful, competent, and most of all connected to adults and other children.

The German team's documentation of the Swedish child care centers concluded that free play is, in many German child care centers, the prevailing activity of early childhood education. Opportunities for free play were very limited in Sweden. Free play seems to occur before breakfast, between the planned activities before noon, and during outdoor activities in Sweden. This is an area of interest for future research (op.cit)..

What is missing in research concerning outdoor play?

One important finding in this review of research dealing with outdoor play is that the influence of the play material is often missing in research. Only very few studies examine the combined result of children's play and the interaction with artefacts and peers. Barbour (1999) found in her studies that equipment, materials, and spatial delineation in outdoor learning environments influence children's physical and social skill development. Each playground promotes or constrains the physical involvement and peer interactions of children with varying levels of physical competence. Several points in this study contribute to an understanding of the impact of playground design.

Edwards and Pope's (2000) results also show that creative-constructive play was evident in all six of the studied communities. Children seemed to have a developmental need to make and combine things, to make marks and draw, and to handle and reshape materials that could not be subdued. In observations from Nyansongo and Khalapur, children continued in their self-directed, constructive activities with mud and cloth even when criticized or told to stop; they were simply too absorbed and interested to heed others' interventions. We can compare this result with Armitage's study (2001). His conclusion was that the

environment provided for children as a place to play must take into consideration the finding that children themselves informally organize their available spaces and features to meet their own needs. The role of the adult should be to support and provide an environment that caters for how children actually play as opposed to how they should or could play, or even how we think they play.

By assuming a direct causal link between environment and play activity, ecological psychology may be used to enrich the planning of behavior settings by drawing attention to how the target group perceives the already existing structure of behavior settings. Human activity is not determined by the environment. The relationship between environment and activity is rather a complicated pattern involving many mutually influencing factors (Bloch & Laursen, 1996).

We need new ways to study and understand playground life. My suggestion after working with this literature review is that we have to focus more on human activity, and this is another way to look upon this field. We can call it an activity theory approach. Activity theory can be seen as an utterance or philosophy with a social constructivist theory as its base. Activity theory can also be seen as an active philosophy that can be used in the study of different forms of human activities. Apparent resemblances can be found between activity theory and a socio-cultural perspective. An activity theoretical effort spans a wide field and can be seen as border crossing tool.

The thought is that all human activity is embedded in a social matrix consisting of people and artefacts (Nardi, 1996). An important aspect is that human activity changes over time and is spread between people and cultures (Jonassen, 2000). Wertsch (1998) highlights the fact that activity theory is a theory that mediates action with focus on the connection between cultural tools and the individual. In the studies presented in this literature review, social and cultural diversity is an important task. What is often missing in research concerning outdoor play is that the subject for the activity is only the individual. We have to include the individual, the group, or those who are engaged in the activity. All activity is object-related and objects can, for example, be artefacts like play tools, signs, systems, theories or whatever helps to mediate the activity. Very little, if any, meaningful activity is executed individually. Knowledge in an activity system is distributed among the

members of the group and in this context among the playing children. Understanding is created in a communicative context where relations and the social reality are woven together. Evidently our social world and our communication with the world around us also includes a form of communication with the material world. Social relations are guided into material contexts and the material influences the social reality. The context of this knowledge is given a new dimension (Lindstrand 2002). Play can be seen as a tool for communication that can construct bridges between children. Children and all humans learn particularly well when they are engaged in constructing together. This is of great importance to remember in future research.

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