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From children's own perspective, play and learning are not always separate in practices during early years. The purpose of this article is, first, to scrutinise the background and character of early years education in terms of play and learning. Second, to elaborate the findings of several years of research about children's learning in preschool related to the curriculum of early years education and, finally, to propose a sustainable pedagogy for the future, which does not separate play from learning but draws upon the similarities in character in order to promote creativity in future generations. Introducing the notions of act and object of learning and play (by *act* we mean *how* children play and learn and with the *object* we mean *what* children play and learn) we will chisel out an alternative early childhood education approach, here called developmental pedagogy, based on recent research in the field of play and learning, but also related to earlier approaches to early education.

Keywords: *Early childhood; Play; Learning; Developmental pedagogy*

Introduction

Play, as well as learning, are natural components of children's everyday lives. When children are asked what they like to do best, the answers are unanimous: to play. On the other hand, education for children is, on the whole, organised to promote learning rather than play. However, while school is traditionally seen as a place of learning and not of play, preschool is more often associated with play rather than learning, from the child's perspective (Pramling, Klerfelt, & Williams Graneld, 1995).

   Play is also considered to be a practice initiated by children, while learning is seen as a result of a practice or activity initiated by an adult. In the context of early childhood education, play and learning are often separated in time as well as in space. Circle time, literacy hours, creative art work etc. are seen as practices of teaching and instruction and thus the origin of learning, while play is put aside until leisure time or outdoor hours and is part of children's own resort. At the same time,

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curricula of early years education around the world state that play is supposed to be of the utmost importance.

The purpose of this article is purely theoretical. Initially we wish to scrutinise the background and character of early years education in terms of play and learning, then to elaborate the findings of several years of research about children's learning in preschool related to the curriculum of early years education and, finally, to propose a sustainable pedagogy for the future, which does not separate play from learning but draws upon the similarities in character in order to promote creativity in future generations.

The Playing Learning Child

According to Krecker (1977), Henriette Schrader Breyman clearly separated play and work in the very first German Kindergartens where work was carried out in the kitchen and in the garden under supervision, while children were left to play with the Froebel gifts on their own or together with other children. This kind of approach, distinguishing play and learning, is still the most common, at the same time as there is a heavy rhetoric about play as necessary for learning and education. However, how play and learning are related is almost never discussed, even though there are examples of pedagogies where the teachers play certain scripts together with children and in this way mediate information that they believe children will later pick up. Teachers, however, often get too "teacherly" in their efforts (see, e.g., Singer & Singer, 1990). However, let us turn to the child as *a person*—an individual in his/her own right.

From children's own perspective, play and learning are not always separate in practices during early years. Let us start with a description of a video recording of Hjalmar (16 months old):

Hjalmar opens a large drawer in the kitchen, exploring all the objects that are there, and turns all the knobs on the oven. He then takes out a lot of kitchen tools. All the plastic bowls are sorted according to size. He experiments, changes his mind a few times. He then begins to put back all the kitchen tools and bowls into the drawer. Suddenly he bends down and lifts up a plastic bowl with both hands, pretending that it is heavy and groaning "Oh, oh!" He does this twice. And finally he stops a little bit from the drawer, takes aim with the last object and throws it into the drawer.

The project as a whole is initiated by Hjalmar himself and he makes his own decisions and seems to enjoy it. He approaches this drawer for the first time ever. He explores and we can see basic mathematics in his comparison of size. At the same time we can see that he pretends that a bowl is heavy. He also coordinates his movement (throwing) with getting the object into the drawer. What we can see here, in our opinion, is a child who plays and learns simultaneously. When Hjalmar acts he is focusing on different things in his mind, something he wants to make sense of irrespective of us adults calling it play or learning.

In the example above we describe a child acting by himself, let us now look at another example in a video clip of Oscar (2.4, i.e. 2 years, 4 months):

Oscar comes to the table and sits down with a jigsaw puzzle. He starts to point at the pieces, "talks" and gesticulates (not understandable), but beams like a sun and "talks" about one piece after the other. Karin, one of the teachers, comes and takes a place beside him. He slithers backward with his chair. Karin puts him back in place at the table and says: "No, you will slide down!" She asks: "What's on that piece?" "That," says Oscar. "Yes, look pearls." He shows his necklace with pearls to Karin. "You also have pearls around your neck." Looks at his necklace. He "talks" all the time, but the observer cannot discern what he is saying. "Shall we put the pieces together?" asks Karin. He wants some help from the observer when Karin leaves for a moment. He does not manage to get any pieces together. Karin fetches an easier puzzle. She collects the pieces from the first one and puts them in its box and gives him the new one. He beams with all his face and says: "Other?" "Yes, another jigsaw puzzle," says Karin. He picks up a cat from the puzzle and tries to put it back in its place again. He calls it "cat". Karin asks him how the cat sounds and helps him put the cat in place. He picks it up again, opens his eyes wide and says: "Wow". "Again," says Karin. Once again he puts it in place. He climbs down from the chair and moves it closer to the table, over and over again. "Is it alright now?" asks Karin when he sits down again. He wrinkles his nose and climbs down again, moves the chair back and forth, over and over again. He fetches a doll, which he places on the chair. "So he should sit there instead," asks Karin. The doll slides down and Karin fetches a foam-rubber block so that the doll comes higher up on the chair. Oscar continues to adjust the doll and picks up a piece of puzzle. Suddenly he takes the doll, runs over to the sofa and puts it down. "Look, he's sound asleep," says Karin. Oscar returns, throws away the foam-rubber block and sits down on the chair. He takes the cat and runs over to the sofa and places it there. He adjusts the chair again. "Sleep there," he says. He goes back, takes the doll, the foam-rubber block and the cat. Once again he places the doll on his chair. "Is he [the doll] going to do the puzzle again?" asks Karin. Oscar places the puzzle in front of the doll. He lifts up the cat, runs over to the sofa and goes back to fetch it, over and over again. "I run," he says. On one occasion, he places it on the chair instead, but then he forgets where he has placed it and keeps looking on sofa. But finally, with some clues from Karin, he finds it again.

Here we can see how the teacher wants him to do a jigsaw puzzle, but the puzzle is too difficult for him and she realises that and gives him another one. He beams with joy and immediately starts to use it. But pretty soon he starts to monkey about with his chair. Suddenly he sees the doll and wants it to sit on the chair and to do the puzzle. The teacher helps him when he gets problems making the doll sit on the chair. A while later he decides that the doll should go to sleep and puts it to bed on the sofa. He does the same with the cat. This sequence continues with him fantasising and pretending and alternately placing pieces in the jigsaw puzzle, while he is keeping on communicating with his teacher. She helps him focus on the puzzle, but she also follows him in his tricks and ideas. He also imitates things she has done.

In this sequence the interplay is not only between play and learning, but also between the teacher and Oscar as initiators.

Our conclusions are that when young children *act* they do not separate between play and learning, although they separate them in their talk (Pramling, Klerfelt, & Williams Graneld, 1995). Some children who have been involved in a pedagogy where play and learning become integrated do not even make a distinction between play and learning when they are asked about it in primary school.

School children's thoughts about play and learning are interesting in the way many children express similarities in their ways of talking about the two (Johansson, 2004). This means that they describe play as well as learning as joyful, as an activity or as something transgressive, that the two touch upon each other or run into each other and are transformed in relation to each other. The element of transgression is characteristic of school children's talk about play and learning. Ebba (8.11) says: "Well, I don't know how to explain, but if you think of some work and it is really fun to do, you think of it as play…well script writing is something I like to do and then it turns into some sort of play" (Johansson, 2004, p. 20). Anton (9.3) says: "I really don't know…you understand more…like if you learn a new game which you didn't understand when you were little, but when you get older you understand it" (Johansson, 2004, p. 22). Anton relates to learning of a certain game that he has previously learnt to play, but suddenly it means something different to him. This is an instance where he thinks that play and learning can be related:

> Children in this class have primary and leisure-time teachers who work together throughout the day, which means that they can change between doing "school work" and play. The play they engage in is part of the adults planning, that is, the play themes are related to the topics dealt with in the curriculum. Children here have an extended freedom to make choices and be in control. What could be said about this classroom is that it does not have the most usual approach of primary schools, neither in Sweden, nor in any other country. (Johansson, 2004, p. 27)

Children are playing learning individuals when they are young, and when they begin to separate between the two, this message is mediated to them very much by the prevalent school culture.

Recent Perspectives on Play

Is play still as important as often claimed in early childhood education? If we look at the excellent publication *Eager to Learn* (National Research Council, 2001), about what research has told us today about young children's learning, we can, however, establish that the notion of play is totally invisible. Obviously there are two parallel discourses today about play as something gaining terrain or as something fading away in favour of learning (Pramling Samuelsson & Asplund Carlsson, 2003).

Many researchers have claimed that it is difficult to define play (see, e.g., Johnson, Christie, & Yawkey, 2005; Lillemyr, 2001a, 2001b), so we will not even try, but

instead we will look at some studies where we find that play constitutes a way for the child to make sense of his or her world. Many studies today claim that children create knowledge when they play (Dau, 1999; Levin, 1996). Play, according to Levin, gives children opportunities to *be in control* of what is happening and what they know. Play, together with friends, allows children to exercise self-control and develop what they already know, take turns, cooperate and socialise with others (Glover, 1999). In children's play there are unsuspected opportunities to symbolise and use objects in a way that is *meaningful and thrillin*g to them. Docket (1999) also points to the fact that play research is moving in the direction of inter-subjectivity and shows how these studies help us realise how children in play become aware about others children's perspectives (Astington, 1998, 2000). In this respect, we will illuminate how the play reality puts great demands on children's *capacity of simultaneity* since there are a variety of demands at the same time in play. Children have to bear in mind what they have negotiated to be as characters in the play settings, which role that means, what the other children are acting as, what different objects are supposed to be etc.

From a Piagetian perspective we think of play as children's work with the experiences they have got, but Sawyer (1997) argues for perceiving children's *play as improvisations* where there is no manuscript, but the script is created on the spot in the interplay between children. The Swedish preschool curriculum (Ministry of Education and Sciences in Sweden, 1998) calls attention to the fact that the environment in preschool must be joyful, must give children a feeling of belonging and must see communication, play and learning as an intertwined totality. In an environment like this, one can see how children learn through discussing, arguing and exploring each other's ideas and ways of thinking (Johansson & Pramling Samuelsson, 2006). Children's cooperation and co-learning is extended in preschool (Williams, 2001) and also as *transference of culture* (Johnson, Christie, & Yawkey, 2005).

In play, children *communicate and interpret* continuously in the negotiation with peers and role play. At the same time as they act the play, they produce the content of it by talking about what to do and in what way it should be done, that is, the *meta-communicative approach* children take in their *play* (Bateson, 1976; Knutsdotter-Olofsson, 1993, 1996).

Play research has expanded recently and is to a large extent about meaning-making and communication.

Play and Learning in Some Preschool Approaches: Changed perspectives

During more than 150 years of early years education there have been a number of more or less successful approaches in preschool, of which we here will briefly discuss a few, totally aware of the fact that it is hard to do so properly in a short section. The programs we will use are: Froebel, Montessori, Dialogue pedagogy, Reggio Emilia and High/scope. But before doing so, we will introduce the notions of act and object

of learning, since we will use these notions in the discussion. By *act* we mean *how* children play and learn and by *object* we mean *what* children play and learn.

That *children learn by being active* seems to be something all the above-mentioned programmes agree upon. In the Froebel (1995) and Montessori pedagogy, activity is, however, a question about the child's inner drive. In the High/scope programme, children seem to become active by teachers adapting activities to the child's level of development and using a structure where children have to be active. In the dialogue pedagogy, argued for by Blank (1983) and very popular in Sweden in the 1970s, as well as in the Reggio Emilia pedagogy, activities are shaped in the interaction with the world around them. The activity as such in these programmes follow a scale from biological instinct towards social interaction, or from an individual to an environment and social relationships, which, on one hand, can be seen in Montessori where the child is supposed to be emotionally free and, on the other hand, in Reggio Emilia, where the child is an individual with capabilities and rights. The domestic work, which was important in Froebel's pedagogy had as one main point that children should learn in an authentic environment, a perspective handed down to Montessori (Asplund Carlsson & Johansson, 2000).

In relation to children's own activities there is also another aspect, which is how the child is perceived in relation to adults. Morals and religion are important components in Froebel's pedagogy and global understanding in Montessori's. In High/scope it is hard to see any form of values, but in Reggio Emilia the values are political. So the trend is *from religion to democracy*. At the same time, one can see that only the Reggio Emilia pedagogy abstains from thinking about the child as being limited to developmental stages.

On a theoretical level there seem to be some similarities between Froebel, Montessori and High/scope, on one hand, and Reggio Emilia and dialogue pedagogy, on the other. What distinguishes the two latter, however, is the direction and content of the work. In the dialogue pedagogy, the child's *questions as such* are at the centre, while in Reggio Emilia the child's *questions about the content, about the theme* or project that the adults have decided on are central (Rinaldi, 2001). However, the objects of learning are not at all spelled out but the focus is on the child as a psychological human being and on creating a content of a theme in negotiation between children and teachers. The notion of the object of learning has been strongest in the Froebel pedagogy in terms of religion and mathematics.

Although maturity was not considered as a pre-requisite for learning, the Froebel, Montessori and High/scope pedagogies are strongly related to developmental stages. Montessori, through her "sensitive periods", and High/scope, as the stages of Piaget, constitute the base. In Froebel's pedagogy one can see more of a line than stages but, of course, the field of child development was not at all advanced at his time.

Another aspect of great importance earlier on as well as today is *play*. Although children play in all these programmes it is specifically discussed only in the Froebel pedagogy. Play there is a necessity, separated from learning and work, while in Reggio Emilia play appears as integrated in learning or as a dimension of learning.

Montessori, in her pedagogy, in principle distanced play from work in preschool. Froebel introduced play as an important activity in preschool education, sometimes called "free play" in contrast to learning (Lindqvist & Löfdal, 2001). Even though the play with Froebel's materials was not particularly free, there was space allotted for the child's inclination to act. In Reggio Emilia there are the same expanding dimensions in play as in learning, although it is never problematised.

Another dimension through the history and the various programmes is *from concrete activity* (Froebel, Montessori and High/scope) *to communication and interaction* (dialogue pedagogy and Reggio Emilia). At the same time it is interesting to notice that creativity and cultural (re)production (to represent in pictures and other expressions) are present throughout the whole history of early years education, although it has been specifically highlighted in Reggio Emilia.

It is also interesting to notice that Froebel, Montessori and High/scope pedagogies all have their ground in a *compensatory* way of thinking, since the target groups have been children at risk or from low income homes. The dialogue pedagogy and Reggio Emilia is *for all children*.

In developmental psychology there have been very clear paradigmatic shifts (Sommer, 2005a, 2005b). These can also be seen in preschool pedagogy, even if it is not as clear. The most obvious, however, is the perspective on children as *having rights* as human beings (Nutbrown, 1996) and also the inclination of taking *children's perspective*. This means that children become partners in their everyday life in preschool. This seems to be a universal trend, not only for the Western countries (Ernst, 2000, pp. 38–42). Maybe one can claim that there is a new universal paradigm developing, where the child's experiences become central and this is, of course, influenced by the UN convention of the rights of the child.

The *objects of learning* have never been strong in preschool, with the exception of Froebel's pedagogy where mathematics was obvious, in Montessori where reading and writing in later preschool years became important and, finally, in High/scope where defined key-notions constitute the learning object (Hohmann, Banet, & Weikart, 1989). On the other hand, values have been important in most programmes, although the nature of the values has changed. The *act of learning* has, on the other hand, been very strong and thoroughly developed during the whole history of preschool. All the way, the child and his/her integrity have been met with respect. There has been a certain consensus about the fact that children are different from adults, which is a kind of developmental perspective. Children are not driven by long-term goals like adults, but interested in here and now questions, and the concrete rather than the abstract is always in the mind of the child. Therefore this became a central question in all programmes; how to catch their interest and get children engaged. Maybe this basis in the thought of the child being active "by nature" has made all the early childhood education people put all their energy in turning to the act of learning—or the issue of how children learn (Bruce, 1990, 2004; Pramling Samuelsson & Asplund Carlsson, 2003). This means that notions such as play, wholeness, inner motivation, self-control, active child, starting where the child

is etc. have been central. In this way the act of learning—how learning comes about—has been, and still is, focused on the early years. Also more general theories of learning, such as Piaget's (1976) or Vygotsky's (1972[1934]), focus on the act of learning. But preschool is not a place for children's general lives, but a specific arena where children learn and develop within certain frames. Preschool is not home, even though many activities that take place there often have the home as a raw model (Dahlberg & Lenz Taguchi, 1994; Nordin-Hultman, 2004). What takes place in preschool is different from what takes place at home and both teachers and parents are aware of this.

Play and Curriculum

At Göteborg University, systematic studies of learners and, among them, small children, have shown that learning presupposes an act as well as an object (Pramling, 1990, 1994; Marton & Booth, 1997). In preschool, the act of learning has so far been far more focused than the object of learning. How children learn—by imitation, by doing, by talking, by experimenting, by trying and failing or trying and succeeding or by reflection and communication as well as in play—has been much more explored than the actual object of learning.

Children's playing and learning is always focused on something, an objective (what the child wants to play or learn or the teacher). This is different from what we imply when we talk about the object of learning, which means:

- the intended learning object;
- the enacted learning process; and
- the lived learning object.

One example is when teacher and curriculum have the dual intention to develop children's understanding of signs as a cultural conception for communication (intended objectives). For this purpose, children are activated in a lot of activities and engaged in certain experiences in which they meet and relate themselves to signs and texts. The teacher has a great impact on the process, which, in this case, is the enacted learning process. The result as "a touchdown in time" is what a specific child can express at a certain moment when the child's competence is documented (lived) (Marton & Tsui, 2004). The result can be different three days later when the conditions are changed. This means that the learning object includes the entirety, since each aspect is dependent on the others. In all three aspects of the learning object, play can be used in various ways!

Johnson, Christie and Yawkey (2005) focus the relation between curriculum and play by describing different kinds of relationships. As we understand it, the preschools of highest quality are the ones where one can see in children's play what they work with in their daily curriculum and also how the themes coming up in play are picked up by the teachers in the curriculum work. This means that the time in preschool becomes whole, implying that the teacher's role and the children's roles

become equally important: *both of them* contribute to what is going on in the every day life in preschool. Studies also support the necessity of both as contributors if play and learning are to be integrated in education (Johansson & Pramling Samuelsson, 2006). No matter whether teachers call something play or learning, there must be a content, an object to focus on and think about!

In our view (based both in practical work with children and many years of research in the area), organising the children's learning process in early childhood education means that:

- a teacher must be aware of both the child's and her/his own perspectives—this is of paramount importance;
- both the child and the teacher must be involved/engaged in the process;
- the teacher's goal direction and sensitivity to the child's perspective have to work simultaneously; and
- both the communication and interaction between teachers and children and between children are necessary (this also includes power, positions, freedom to choose and creativity).

Organising activities—working in a goal-directed way—with young children means having an approach that utilises all the standpoints mentioned above. This means that attitudes, knowledge, interaction and environment are intertwined into a totality. Early childhood education must be organised to allow the greatest possible amount of interaction and communication between children and between children and teachers on a daily basis. They must also have something to communicate about!

We just want to remind the reader that the purpose of this article is not foremost to put forth a critique of some theories of early childhood education separating play and learning, but mainly to advocate the necessity to analyse the similarities of play and learning from the child's perspective in the designation of a new preschool pedagogy. This pedagogy for early childhood should be different in nature from the traditional teaching at school and be formulated with a basis in research on children's play and learning.

Towards a Theory of Early Childhood Education Pedagogy Based on the Similarities between Play and Learning

There are three aspects in particular we will discuss to make clear what we mean by similarities between play and learning. These are: (1) children's experience as a point of departure, (2) discernment, simultaneity and variation as key-factors and (3) meta-cognition, meta-cognitive dialogues and meta-communication as crucial issues.

Children's Experience as a Point of Departure

Whatever a child is doing or saying s/he is always acting from his or her perspective. This means that the starting-point as well as the result of a learning task has to be

traced in terms of the child's perspective in the preschool setting. Since it is a pedagogical situation in preschool, the child's perspective is very closely related to the teacher's actions and other experiences (Hundeide, 2003). Let us therefore look at a situation in preschool with a five-year-old girl and her teacher to illustrate a child's experience and the teacher's role in expanding the child's experience.

A teacher and some children are working on a theme about mushrooms. One girl begins by stating that toadstools are poisonous. The teacher has the curriculum objectives—learning and knowledge about symbols—in her mind. She asks the girl: "How can you let other children know about this poisonous mushroom?" (symbol). The girl's answer is: "Write a note!" "Can young children read?" asks the teacher. The girl then makes a drawing of the mushroom and puts a cross over it to symbolise that it is dangerous. The teacher then continues to challenge her by asking: "Are there more ways of getting to *know* (learning) about poisonous or edible mushrooms?" The girl draws and talks about a specific book her mother has about mushrooms. The teacher continues the dialogue and challenges her further: "Are there more ways of finding out?" The girl answers: "If you learn to recognise specially nice and tasty mushrooms (like the french cepe and the bolete), instead you will focus your attention on finding them and not see the toadstools the poisonous ones."

By the teacher focusing the child's attention towards the problem that rises in this dialogue, the child expands her understanding and, in doing so, changes her perspective, which is learning from our point of view. What your attention is focused on is what you make meaning of (or learn about), irrespective of it being play or learning from an adult perspective. This is one of the main features of what we call "developmental pedagogy" (Pramling Samuelsson, 2006), that one of the teacher's roles is to direct children's attention towards the learning objects s/he wants children
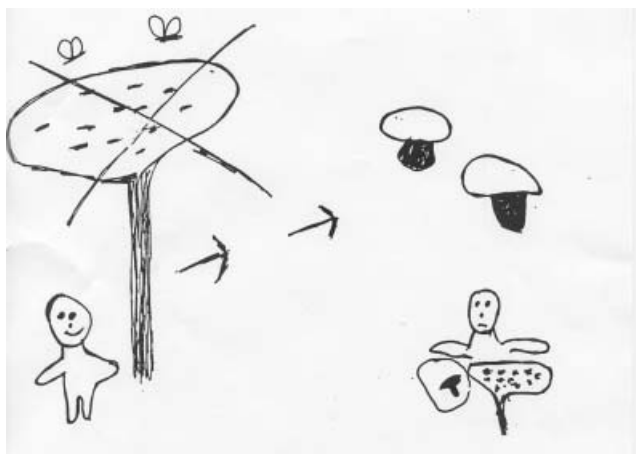

Figure 1. A five-year-old girl talking about mushrooms

to develop an understanding about, irrespective of whether this takes place in play or in learning situations.

Knowledge then becomes an internal relation between the child and his or her world. This means that the context, experience, situation, familiarity, relations to others etc. means a lot, influencing how children make sense of the world around them (Hundeide, 2006). This is not an argument for an ultimately relative perspective. Instead, children are perceived as being part of an internal psychological process—however, environment and experiences in the culture have an impact on every situation.

Here, making meaning as a playing learning child is related to taking the child's perspective, whether or not something is initiated by the child or the teacher. It means that the child has to contribute by expressing him- or herself verbally or bodily in order to make meaning. In other words, this is achieved through participating in the meaning-making processes (Pramling Samuelsson & Sheridan, 2003). This puts demands on the teacher. First of all, the teacher must have knowledge of children in general (child development) *and* about the particular child in focus (family, daily experiences, interests etc.). The teacher must also make an effort to listen to and observe children and be willing to see what the child sees and to interpret that. The teacher must also show respect for each child's experiences, knowledge and competence from the child's perspective. The child must contribute him- or herself about the object of learning or play, although, in the end, the adult interprets it (see further Johansson & Pramling Samuelsson, 2003).

Variation, Discernment and Simultaneity is the Source of Play and Learning

In his book *The Ambiguity of Play*, Sutton-Smith (1997) first of all refers to biological evolution as a model for human development, where *flexibility* is more important than precision. Evolution is characterised by *flourishing change* and *latent possibilities*. Both play and learning could be described in this way.

His second principle of variation refers to *abundance*, that is, the body's skill to overproduce synopses. Again, play and learning similarly involve an endless reproduction of many different possibilities. Flexibility is the keyword for the biological world—and without great flexibility neither play nor learning is possible!

> All of a sudden I saw, in this piece of information, another useful metaphor with which to understand the role of play. We could say that just as the brain begins in a state of high potentiality, so does play. The brain has these connections, but unless they are actualised in behavior, most of them will die off. Likewise, in play, even when novel connections are actualised, they are still not, at first, the same as everyday reality. Actions do not become everyday reality until there is a rhetoric or practice that accounts for their use and value. Play's function in the early stages of development, therefore, may be to assist the actualisation of brain potential without as yet any larger commitment to reality. In this case, its function would be to save, in both brain and behavior, more of the variability that is potentially there than would otherwise be saved if there were no play. Piaget's

theory of play is, of course, the very reverse. He says that it is only after connections are established by real-life accommodation that they are consolidated in play. The present thesis would hold that another play function, perhaps the most important one, may be the actualisation of novel connections, and therefore the extension of childhood's potential variability. (Sutton-Smith, 1997, pp. 225–226)

One form of variation in *play* is the oscillation between *fantasy and reality*—in learning the concrete situation and how the thoughts progress towards an understanding (something which is seldom concrete). Both play and learning are characterised by temporal and spatial variation.

Sutton-Smith also talks about play as a neonatal biological process, as cultural variation (music, dance, song etc.). He also claims that there is a transference of "play-skills" to everyday skills and that children create a repertoire of ways of acting in play. However, from our point of view, there is also another perspective that means that variation creates a basis for differentiation, which is as important in play as in learning.

Let us consider the variation (Runesson, 1999). Both similarity and variation are fundamental to several critical aspects of cognitive development in childhood, including the ability to distinguish one learning object or phenomenon from others, which, in turn, is fundamental to the categorisation process. For example, for a young child to be able to understand the concept of flowers, rather than simply to name a single flower as a flower, it is necessary for the child to experience a variety of flowers in order to distinguish the essential features that constitute what we call a flower. However, it is not sufficient simply to let the child experience a variety of flowers. S/he must also experience that the flower differs from other plants, such as trees, shrubs and grass. Gradually the child will become able to understand the concept of a type of flower, distinguishing the critical features of the rose from other flowers. Even if young children can recognise a rose as a flower before they have understood the concept of flowers, they probably do not understand what constitutes a rose.

Certainly this case applies to other dimensions of content. To be able to learn an important rule in an early childhood programme or at elementary school, it has to have personal meaning, which can be induced by using the rule in different situations (the rule being constant). It also has to be clear that this rule can have various meanings (variation). Finally this rule must have critical features that make it discernible from other rules. There can be a rule of "every child's right to equality". This has to make sense for each child, but it also needs to be discussed in many different contexts and negotiated in a variety of situations before this rule of value will have a deeper meaning for children.

The kind of variation we advocate defines learning as the *variety of ways* in which *one child* produces variation, as well as the *variety of ways* in which *a group of children* think about one and the same phenomenon, the same problem or concept. These are examples of intra-individual, as well as inter-individual variation. The variety of ways in which a child thinks about a single phenomenon, problem or content is itself the content of the teaching process (Doverborg & Pramling, 1995; Doverborg &

Pramling Samuelsson, 1999, 2000; Pramling, 1990, 1994). In other words, the teacher uses variation as a strategy to make particular knowledge, skills, ideas and phenomena visible to a child. As the child thinks in various ways about a topic or phenomenon, s/he becomes able to recognise variations within the topic or phenomenon and different meanings that may be derived from it.

Play as well as learning is constituted in a society *by people* who agree about actions, persons, objects, situations, time and motives for play or learning. So what we have tried to argue for is to see play and learning as equal dimensions with many similarities within education for young children.

Meta-cognition, Meta-cognitive Dialogues and Meta-communication

For many years, meta-cognitive research has been carried out at Göteborg University on preschoolers' learning (see, e.g., Pramling, 1983, 1987, 1996) with great success in influencing young children's learning (NSIN Research Matters, 2001).

The approach to working with young children meta-cognitively has been to focus children's attention, as we saw in an example above (this could, however, be done in many different ways, see, for example, Doverborg and Pamling Samuelsson, 2000). Whatever the task or topic is about, the teacher makes children think, reflect and express their ideas in different ways (verbally, in drawings, in play, in experiments etc.) The teacher then uses the different ideas the children come up with as a content in a second discussion about the topic or task, that is when children's attention become focused on the meta-cognitive aspect. This procedure helps to get children to become aware of the fact that they have different ideas and different ways to think about the same phenomena. Thus, the object in the second round is not the task or the topic, but rather the thinking about the task or topic.

Communication and interaction in this way become based on two levels, thinking and thinking about their own thinking (Pramling Samuelsson & Asplund Carlsson, 2003). A parallel to this approach between the teacher and children can be seen in children's play. When children play they *spontaneously* use both communication and meta-communication, as described earlier in this article. The *equivalence* in the learning approach is that, *assisted by the teacher*, the children's interest is focused on thinking and reflecting about something. When the children have expressed their ideas, either verbally, in drawings or other ways, the teacher focuses their attention on how they think about something, that is, the meta-cognitive aspect of learning (for examples see Pramling, 1996). This means that the teacher's task is to try *to make the invisible visible for children*.

Play is not the Same as Learning

We are not arguing for perceiving play as learning or vice versa, but there are play dimensions in learning and learning dimensions in play that are important to work with in young children's learning and development. Neither are we trying to

re-define the notions of play or learning, but, instead, to use these notions differently to create a new preschool pedagogy, something Elkind (1988) talked about as a third way of preschool pedagogy many years ago.

A vital dimension of both play and learning is *creativity*, which is viewed here as the source of all learning objects in preschool. This means that all learning is a question of creating something new for the individual—that is, to experience something in a new or slightly different way (Next Generation Forum, 2000). "As if" is another notion often related to play—but this notion is as important in learning as in play (Vaihinger, 2001). This means that learning tasks must also have the aspect of "as if" for children, in order to be able to go beyond and challenge their own thinking.

Ellen Langer's (1997) notion *mindfulness* is another dimension of play as well as learning. With mindfulness she means "to be aware, perceive or be attentive toward something". Being responsive and interested is as important in play as in learning.

The last notion we will bring up is Anna Craft's (2002) notion, *possibility thinking*. In play, children deal with possibilities all the time, but this way of relating oneself to the surrounding world is just as important in learning.

Taking these notions seriously means recognising and making use of the close connection between play and learning. This is often a question of the teacher seeing the possibilities in all activities in early childhood education.

Experience of action research with teachers involved in the kind of preschool approach presented here is that they can say: "I have always been thinking about play as something children learn from—but I have never seen the play aspect in learning". Another teacher claims that today she has fewer planned activities for the whole group since communication and interaction are hard to use in large groups (Johansson & Pramling Samuelsson, 2006). What the teachers are saying here is that they must make room for improvisation, interaction and listening to the children.

Let us listen with all our senses to the two girls in the following example:

Hjördis (6 years) and Frida (5 years) are playing in the living-room. The context is that the rest of the family is having dinner in the garden. Someone has just asked: "Where are the girls?" Ingrid has volunteered to find out, and what she has found is this: There they were in the living room, having arranged all the umbrellas they could find in the house (according to colour and pattern) and taken out all the Danish china, playing at having a party.

We can only imagine their dialogue and negotiation when arranging and producing this situation. Has Frida learnt something from Hjördis, or the other way around? As far as we know, this was the first time they produced this specific arrangement; so what did they invent together? How did they come up with this idea, and how did it take form? Although we do not know this, we can see how creative they are, and most probably there is a dimension of "as if" and two mindful children letting their "possibility thinking" lead them.

What we do know, however, is that this situation is characteristic of *playing learning* children! The child's perspective naturally leads to an integration between play and learning.

Towards an Alternative Approach to Preschool Pedagogy—"Developmental Pedagogy"

Different early childhood curricula have different ways of presenting goals for very young children. Paula Oberheumer (2005) claims that the most common way to perceive goals is to state what knowledge or skills children are supposed to reach before they leave the early childhood setting. The Swedish curriculum for early childhood (Ministry of Education and Science in Sweden, 1998) differs from others since it only states goals to strive for but not necessarily reach.

The goals for early childhood education are defined in the curricula and in the teacher's mind. This means that the way s/he constructs the environment and what kind of experiences are provided are decisive for children's learning and opportunities to make sense of the world around them. The curriculum must be internalised and lived by the teacher. This means that s/he must see the possibilities everywhere in the child's environment (Doverborg & Pramling Samuelsson, 1999; Pramling Samuelsson & Asplund Carlsson, 2003). The teacher must also contribute to a challenging and rich environment (Siraj-Blatchford, 1999). This includes using their own knowledge to create situations, tasks, play milieus etc. (Doverborg & Pramling, 1995).

One of the main features of the approach we are arguing for is how the teacher can direct children's awareness towards the learning objects. On one level, the objects of learning in early childhood education are related to values and norms, skills and capabilities and to an understanding of different aspects of the surrounding world. This means that the learning objects are the same throughout the whole education system, but at different levels of complexity from a teacher's perspective.

From the child's perspective, it can be as complex to grasp number conceptions at the age of four as to understand multiplication later in school. They are all dimensions of the same learning object at different levels of learning. This does not mean that preschool should be subject-orientated, but the basic dimensions of, for example, reading and writing, mathematics, science, culture etc. must be there. More general dimensions, such as democracy, gender equity and social, emotional and cognitive competences, also have to be included to comply with the curriculum. The object of learning is then similar throughout the whole school system. The act of learning, however, is different!

There might be a reason why the focus on *how* children learn has been so strong throughout history (Bruce, 1990). Young children are different from school children, not just because they have not yet learnt to be school children, which for many children means to take instructions and wait for their teacher to give response. Young children are active "by nature". They are constantly "on-going"! This puts certain demands on the teacher. These demands could be described as making children interested in specific learning objects, but also as capturing the child's interest. All of this requires the teacher to be able to tune into the child's world (Pramling Samuelsson, 2004; Stern, 1985, 1991). Siraj-Blatchford, Silva, Muttock, Gilden and Bell (2002) talk about "shared sustainable thinking" as one important

quality factor in children's learning. This means that the teacher and the child/ children share the same object for communication and thinking—something many studies have shown to be rare (Doverborg & Pramling Samuelsson, 2000; Kärrby, 1985; Pramling, 1983).

The teacher's role is equally important for learning and play. It is important for giving support and inspiration, for challenging and encouraging the child's willingness and desire to continue the process of making sense of the world. This means that the focus should be on the process of communication and interaction.

An approach to early childhood education built on a perspective of goal orientation related to the playing learning child challenges the teachers to be child-centred and directed towards objects of learning simultaneously. It also challenges the children to maintain their right to self-determination and to pay attention to the object of learning simultaneously.

Being able to integrate play and learning in a goal-orientated preschool means to see the playing learning child and, in so doing, make room for children's creativity, choices, initiatives, reflections etc. It also means being aware of the objects of learning and utilising the whole day and all activities to develop the child's understanding of different aspects of the surrounding world (Pramling Samuelsson, 2005).

In the present article we propose a sustainable pedagogy for the future—a pedagogy that does not separate play from learning but draws upon the similarities in order to promote creativity in future generations. Learning creativity and play in and for future society.

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