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Agency, affordances and artefacts

Towards a theoretical perspective in preschool?

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My name is Sofia Eriksson Bergström. I am a Ph. D student at Mid Sweden University since 2003. I am 33 years old, married and I have one daughter. My basic education was the preschool program (1996-99) at the former School of education in Stockholm. After that I took a fil.kand graduate in pedagogy. I also took courses in special education before I started my research education at Umeå University.

Abstract

This paper reports on a theoretical framework, which consists of two main concepts; activity theory and the theory of affordance. Interaction is what they have in common and also why I think they are compatible with each other. The purpose with this paper is to show this compatibility and the benefits of using this framework in research about the relation between physical spaces and children's learning in preschool. This paper takes an interest in describing these different theoretical standpoints and in explaining why they are compatible with each other and how they together can create a unique theoretical framework to use in analysing the video-recordings. The fact that children do use artefacts is nothing unconventional, but the fact that their learning consists of a changeable participation and that this participation contains mediations through cultural artefacts is something I want to understand and take into consideration by this study.

Key words

Preschool, learning, activity theory, affordances, socio-cultural theories

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Agency, affordances and artefacts – towards a theoretical framework in preschool?

Introduction

This paper reports on a theoretical framework, which consists of two main concepts; activity theory and the theory of affordance. Interaction is what they have in common and also why I think they are compatible with each other. The purpose with this paper is to show this compatibility and the benefits of using this framework in research about the relation between physical spaces and children's learning in preschool.

Instead of confirming and legitimating metaphors like “the child capturing the world” and “the competent child” I would like to throw light upon the relations that arise between the child's actions and the cultural and institutional contexts in which these interactions are created. I want to study in what way children are learners through being a participant in social practices and through continuous *interplay between child, pedagogue and physical preschool spaces*.

Wertsch (1998) means that the task of sociocultural analysis is to understand the relationship between human action, on the one hand, and cultural, institutional and historical context on the other. He argues that we should employ a unit of analysis that focuses precisely on how these forces come into dynamic contact. A reason for choosing mediated action as a unit of analysis is that it does not carve up phenomena into isolated disciplinary slices that cannot be combined into a more comprehensive whole.

Mediated action is grounded on an irreducible tension between elements, such as agents and mediational means – but it cannot be reduced to either of these elements in isolation. These

elements must be understood as dimensions, of mediated action rather than as independently existing essences. According to Wertsch (1998), the human condition is from the perspective of mediated action, to act with cultural tools that are provided by a specific socio-cultural setting.

Aim

My study is thereby an attempt to study preschool children's learning as an activity of meaning-making, which originate from the interaction between children, pedagogues and the physical environment. The main purpose for the study is to analyse how prerequisites for learning are created and an underlying intention is to study how children's participation is expressed in the practice of preschool. Theoretically the inquiry is underpinned with the idea that learning is a process where an individual engagement with something is changing over time.

Accordingly, the central questions in the study are:

- How is the preschool environment mediated by the children in their endeavour to create meaning?
- How and why do children's opportunities to mediational actions in the preschool institution vary?
- Which affordances and/or constraints are expressed in different spaces in preschools and how is children's participation interacted to these affordances and constraints?
- In what way do time, space and pedagogues change and affect children's participation in preschool practice?

The empirical study in my dissertation is based on video observations and interviews from five preschools. Group activities with pedagogues and children were observed. These activities were characterised by the pedagogues' requirement that the children should sit still, be quiet and not touch each other. While one pedagogue urged the children to obey, the other pedagogue typically carried out "teaching". How can a practice like this be explicated theoretically?

This paper takes an interest in describing these different theoretical standpoints and in explaining why they are compatible with each other and how they together can create a unique theoretical framework to use in analysing the video-recordings. I will start by describing a socio-cultural theory of learning and then come into the activity-theory and the theory of affordance to end up with some final thoughts.

A socio-cultural theory of learning

As early as the beginning of last century Vygotsky pointed at the importance of the physical environment in educational processes. He developed the fundamental idea about mediating tools in the learning process as a criticism of the predominant reflexology. The mediating tools, which can consist both of verbal tools and physical artefacts, result in a possibility to understand the world around and how to face it in different ways (Vygotsky, 1978). One of the fundamental claims of socio-cultural research as outlined herein is that its proper focus is human action." (Wertsch & del Rio & Alvarez, 2002) This I find especially interesting particularly in relation to the video recordings I have made. Action is very much indeed a source of energy for preschool children and thereby also something that took plenty of space in my recordings.

According to socio-cultural theory, learning is a phenomenon, which can be seen as dependent of content and connected to the situation. It's about how human beings in situated practices can handle cultural tools and how they become competent actors in different enterprises. (Säljö, 2005) A socio-cultural view of learning includes a focus on the preschool as an enterprise as much as the individuals are paid attention. In such a perspective, structures not only become a background but also an integrated part of the learning process. Through a dynamic, reciprocal interaction between agent and structure where neither is of priority, do children, the agents, change their participation, and this is in fact a process of learning.

Activity theory

Human action is the primarily focus of the action theory. The human actions represent neither the inner nor external, not the interplay between the internal and external, but it represents the connection itself between the internal and external.

Through the actions, needs and motives that develop an activity process is the person connecting herself to the world around. And through the human actions the world around is connected backwards to the humans. So, without human actions there are no relations between the individuals, and neither between the individual and her physical environment. (Knutagård, 2003) Accordingly, the activity theory takes a starting-point in the tension between individual and society.

The main concepts in Leontjevs activity theory are goal, motives, personal meaning, and objective meaning. These concepts help us to understand the relation between individual and the world around as dialectical. The understanding of the human being on the basis of a historical-dialectical perspective means that human beings develop in the light of the society

at the same time she also changes her reality. In that she changes her reality she also changes herself. In this way there is the whole time a development and change of the human being and her conscious as well as the society. (Leontjev, 1986)

Leontjev makes a distinction of personal and objective meaning. Linguistic concepts can partly have an objective significance, partly a personal meaning. The objective meaning do exist without the engagement of the human being, the personal meaning is totally related to our personal connections to the concepts.

According to Leontjev actions cannot exist without a motive or a goal. If the motive is indistinct, the actions become quite unmotivated. The motives create the actions and the course of actions that realize the actions is called operations. In the actions goals and motives are supposed to coincide. The connection between motives and goals is of importance, but what also is important is that motives and goals are kept together in the individuals mind. In that way, meaningfulness can be experienced through the activities. If one loose this connection, the particular actions appear as meaningless. (Leontjev, 1986)

One realistic example when motives and goals are supposed to connect is when a preschool celebrates a child's birthday. They are going to bake a cake (the action) and to accomplish this they need to do a series of acts like make some purchase, find some tools, beat the cream etc. The elder children can take in the whole situation while the younger only take one act into consideration, to the younger child the excitement is connected with the beating and consequently an action since goal and motives connect.

How to understand learning?

The cognitive psychology, which is the tradition that for a long time have been predominant concerning thinking, problem solving and learning assume that we have cognitive representations. It is an assumption that these representations work as mental models, which reflect the external reality. These mental representations should be seen as the content of thinking, what we from the external to the internal have processed. (Piaget, 1962)

According to Vygotskij (1978), it would not be that difficult as it is, to describe the psychology of human beings if the external and internal would be coincident. Within the socio-cultural perspective it is more meaningful to view meaning-making as a dynamic and negotiable relation between thinking, inscriptions and artefacts instead of seeing knowledge as an internal copy of an external representation (Säljö, 2005)

The development depends, however, of how the environment of the human being looks and works and it depends of which mediated tools that are offered. One starting-point in the socio-cultural theory lies in the interplay between the individual and the collective. The child develops from one social being to a higher degree of individualisation. The “ego” develops on basis from the social interactions. Vygotskij considered all kinds of psychological life as created by social human interactions and thereby the interactions in teaching become of great importance.

There is a tension and there are dynamics between the world around and the tools that the individual control, consequently there are elements of both general and particular character involved. To accept this; that we have access to general ways of thinking and solve problem, but that we at the same time must be specific in the situations we find ourselves in, is something completely fundamental in the socio-cultural theory of learning. If learning is seen

as a relation between the individual and the world around and not as an individual capacity, many dualisms are dissolved (Carlgren, 1999). The actions and the context are not in an opposite relation, the actions are an integral part of the context, and they create and recreate the context (Säljö, 2000).

Learning in preschool has a kind of a collective impression. The zone of proximal development is about to understand every single child from her actual and future stage of development. Then you cannot “trust” the fact that the child turn out to be on a specific stage of development and thereby have a certain maturity to understand and act. One didactic consequence of the cognitive theory is that the teaching must be arranged in order of the maturity, which can be decided by tests or examines (Vygotsky, 1978).

It becomes obvious that when you are content in deciding the actual stage of maturity, it reflects a retrospective way of seeing, but with an ambition to find the zone of proximal development you get a more future way of seeing. Many pedagogues in preschool are taught to observe children with the aim to interpret how the child’s acting is in accordance with the expected acting’s compared to the stage where the child should be considering its age.

Taking the zone of proximal development as a starting point, the stable stage and mature theories are deconstructed, you do not need them. Pedagogues can interpret their observations from what they can see the child manage on her own and from what the child can manage together with an adult or another child. The analysis of the observations is to clarify what the zone of proximal development therefore should represent.

The use of artefacts/ tools

As earlier pointed out, Vygotsky developed the fundamental idea about mediating tools in the learning process as a criticism of the predominant reflexology. He objected to the thought that learning processes should be reduced to simple stimulus-response relations and meant instead that we should realise the importance of the role mediated tools have in human actions.

The mediated tools mediate the world around to the individual; the mediated actions imply sort of a screen between human and the world around. This screen supports us to constitute phenomena and we perceive the world. The mediation becomes a bridge over the individual actions and the cultural, institutional and historical contexts. (Wertsch et al. 1995)

According to Wertch, the mediated actions focus on the individuals and their cultural tools. Through focusing on both the individual and the cultural tools you circumvent the otherwise so established view on the individual as the main focus. "Agent-acting-with-mediational-means"(s.24) affords a natural link between the acting and the cultural, institutional and historical context in which these actings arise.

The mediated tools can facilitate or limit the mediated actions (Wertsch, 1998). It is of great importance that we admit the influence that the mediated tools can have on human actions. We should ask why certain tools are more used than other and who is deciding which tools that should be used? In spite of this the mediated tools do not decide or cause actions. Only in the use of tools they can have impact on the actions and therefore you cannot study only tools and physical artefacts. "Instead, mediation is best thought of as a process involving the potential of cultural tools to shape action, on the one hand, and the unique use of these tools, on the other" (Wertsch et al. 1995, s. 22). Mediational tools like artefacts are not static and

fixed; we cannot just internalize them as they are. However, we can interpret their meaning and affordances, they contribute with affordances of meaning, they suggest, guide and propose and they are always unreserved for different various interpretation.

Human beings think and act through mediated tools in most of her acts. When a child learns how to read the watch or the alphabet, it acquires different mediational systems. Taking a socio-cultural theory as a starting-point, we must analyze the activities in order to understand learning. How do the individuals act and what experiences do they get? In what way do they interact with the environment and how do they create meaning? (Säljö, 2005)

The room in didactical circumstances is often disregarded according to Selander (2004). Concerning the didactical questions about teaching and learning they have by tradition consisted of contents in teaching, What? How? And in certain cases of reflections about why? However, it is never asked where this will take place. The Swedish curriculum for pre-school, Lpfö 98, informs that the pedagogy is to stimulate pleasurable learning and should be the basis for pedagogical work. Where this will take place is then a relevant didactical question. Taking a sociocultural perspective as a starting-point, the physical environment will be interesting to study, since it can be seen as a mediating tool in children's acting and perception of the surrounding (Säljö, 2005).

The importance of affordances

Gibson, the founder of the theory of affordances, was of the opinion that we missed a concept, which referred both to the environment and the individual (Gibson, 1986). An affordance relates both to agent and the environment and lies therefore between these two elements.

According to Gibson (1986, p 127) “affordances of the environment are what it offers the animal, what it provides or furnishes, either for good or ill”

Gibson claims on the one hand that an affordance only can be specified in relation to a specific agent/individual and on the other he means that an affordance offers what it does irrespective of the individual. The following example can demonstrate and perhaps elucidate this. A group of children is entering the preschool yard, they are excited because they have finally the permission to play what they want. Free play is what these moments in most cases are called in Swedish preschools. Two five year old children decide to play car repair shop. They have experienced that you often need to work on cars from the underside, but in the preschool yard they have no such possibilities. They have no cars, so the bicycles turn out to be cars. The affordance of the bicycles for these two children is cars, their motive in this play for the moment. They turn the bicycles upside down, so they easily and in a proper way can repair them. The affordances of two spades become something to screw with. They turn the spades at “the wrong” direction to screw with the helve. The car repair shop game is starting and keeping on for five minutes before enough many adult pedagogues enter the yard discovering the bikes upside down, used in a way which is not their “proper” affordances. The car repair shop game is for this time finished.

In my study the strength in using the theory of affordance is that it is built from a relation between the individual and the physical environment. You cannot separate human being and environment; they both have an effect on each other and they are both seen as active agents/parts. Affordances cut through the dichotomy subjective – objective and are equally dependent on environment as the individual. (Gibson, 1986)

Final thoughts

This paper has taken an interest in describing the different theoretical standpoints and I am now going to emphasize a few arguments from the different theories to explain why they are compatible with each other and how they together can create a unique theoretical framework to use in analysing the video-recordings.

The dissolution of dualisms is one reasoning to point out. As just said, Gibson (1986) claims that the individual and environment are not possible to separate since they both influence and presuppose each other. The socio-cultural perspective raises the fact that the human action and the context not are in a state of opposition, they are an integral part of the context, and they create and recreate the context (Säljö, 2005).

Many points of intersections have been crystallized between the theoretical stand points. One is that much happens in the dynamics in between something. The use of artefacts is characterized by a mutual relation. Vygotsky developed a mediated act between subject and object in the former stimuli response relation. The dynamic between individual and society is also the stand point for the activity theory. The essence of the activity theory is what represents the connection between internal and external. Also the theory of affordance is marked by this dynamic in between something, the affordances originate from the relation between individual and environment, and it cannot exist without neither individual nor environment.

When it comes to artefacts Säljö (2005) means that these always have a purpose created by humans, the object is given certain qualities and through these the mediation are possible. A discrepancy to affordance could be that the affordances have different purposes irrespective of

the human being; they do not have a purpose that necessarily has been made up by humans. This ambivalence between what exists by its own, without a person interacting with it, and what arises in the relation between individual and objects is of interest in this study. How can this be understood and considered from an interest for children's learning in preschool?

In preschool children use many different kinds of physical tools, and according to Gibson (1986) all of these objects have affordances offered to children. One affordance is not dependent of the purpose created of a human like artefacts. There are of course also many artefacts that children use under their time in preschool. Of interest in my video recordings is how the mediation with tools and artefacts is expressed and how this is taken into consideration in preschool.

Another interesting and exiting point of intersection in the combination of these theoretical stand points is that mediation and artefacts are deeply rooted in pedagogical processes. The theory of affordances has so far been without didactical connection and in this respect a great benefit lays in completing them. When we perceive an artefact, a phase of more intense use follows where you learn how and under what circumstances the artefact works. You gradually learn to notice different functions that from start were not so obvious. (Säljö, 2005) In this description of how individuals use different artefacts there is a didactical process that you can not find in the theory of affordance. This process can, however, be important to clarify if you, as I earlier pointed at, want to understand and take into consideration that the individual uses tools and artefacts in its learning. I also think this didactical discrepancy is important to arise because the theory of affordances has a possibility to stretch the artefact approach. So, if we can affect affordance with a more didactical view, there is a greater opportunity to understand, analyse and consider the fact that children in preschool constantly use tools and artefacts from the physical environment.

To consider preschool as a community for learning means that you from a socio-cultural point of view presume the activities is given as much attention as the individuals. The situations in preschools are not the background to children's learning but an integral part of learning processes. As soon as the thinking, the use of concepts and the meaning making are regarded as parts of human actions and nothing that independently exists, you also understand the acts as something which arises in the symbiosis with tools and artefacts.

The theories emerge out of an idea that lies on an assurance that research pursues from a standpoint where the individual can be seen as an agent and that the contexts where she acts are integral parts of the actions. The aim of this study is to study children's agency in preschool practices. The agency means not only that the children adjust to the structures in preschool furthermore they become agents by dedication, transformation and resistance to the existing structures (James & Jenks & Prout, 1998). In the dynamic, reciprocal interaction between structure and agent, where none is of priority, a learning process is crystallised. Therefore a central question in my study is: how is the preschool environment mediated by the children in their endeavour to create meaning?

So the fact that children do use artefacts is nothing unconventional, but the fact that their learning consists of a changeable participation and that this participation contains mediations through cultural artefacts is something I want to understand and take into consideration by this study.

References:

- Carlgren, I. (Red.). (1999) Miljöer för lärande. [Environments for learning. In Swedish.] Lund: Studentlitteratur.
- James, A., & Jenks, C., & Prout, A. (1998) Theorizing childhood. Cornwall: Polity Press.
- Jerlang, E. (Red.). (1996) Utvecklingspsykologiska teorier. [Theory of Psychological development. In Swedish.]Arlöv: Liber Utbildning.
- Gibson, J. (1986) The ecological approach to visual perception. London: LEA.
- Knutagård, H. (2003) Introduktion till verksamhetsteorin. [Introduction to activity theory. In Swedish.] Lund: Studentlitteratur.
- Leontjev, A.N. (1986) Verksamhet, medvetande, personlighet. Göteborg: Fram bokförlag.
- Läroplan för förskolan. (1998) Lpfö 98. [Curriculum for preschool. In Swedish.] Utbildningsdepartementet. Stockholm: Fritzes förlag.
- Piaget, J. (1962) Play, dreams and imitation in childhood. New York: W.W Norton & Norton. Inc.
- Selander, S. (2003) Det pedagogiska rummet. [The pedagogical room. In Swedish.] (Rapport från forskningsgruppen DidaktikDesign). Lärarhögskolan i Stockholm.
- Säljö, R. (2000) Lärande i praktiken: Ett sociokulturellt perspektiv. [Learning in practice: A socio-cultural perspective. In Swedish.] Stockholm: Liber.
- Säljö, R. (2005) Lärande och kulturella redskap. [Learning and cultural tools. In Swedish.] Stockholm: Norstedts akademiska förlag.
- Vygotsky, L.S. (1978) Mind in society. Cambridge, MA: Harvard university press.
- Wertsch, J & del Rio, P & Alvarez, A. (Eds.). (1995) Sociocultural studies of mind. Australia: Cambridge University Press.
- Wertsch, J. (1998) Mind as action. New York: Oxford university press.