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A Cultural-historical Approach to Learning in Classrooms

Summary

The basic conception of this paper is to conceptualise learning as a change in relation between a person and the world through change in his/her capacity for tool use and interpretation of artefacts. Further this relation has to be defined within a context (state, societal field, institutional practice and person's activity). Both context and tool/artefact have to be seen as objectification of human needs and intentions already invested with cognitive and affective content.

Introduction

The traditional theory of learning as transmission where the teacher transmits knowledge and the student listens and answers the teacher's questions by copying from his presentation, has been abandoned as an adequate model for school learning. New concepts have come to dominate learning theory, such as *participation in social communities* and *active creation of competence*. The conception of children's learning in school has changed from a conception of receptive individual cognitive activity to a participant tool-mediated social activity. The aim here is to contribute to the conceptualisation of learning in classrooms from this new perspective and to go a step further and demonstrate that children not only learn

through participation in social practice in the classroom. Children also through this participation become involved in a reciprocal social process where their motives and personalities influence the activity of the classroom, and thereby contribute to their own learning conditions. Furthermore, cultural traditions and values in family and community also influence the child's learning activity.

The relations between learning and teaching in the cultural-historical approach of Vygotsky build on the idea of tool mediation (conceptual and manual) as the foundation for children's psychic development. I will start with the presentation of this idea but I want to develop this idea further into a model of how children create their own learning conditions through their participation in institutional practice.

The Instrumental act

Vygotsky (1997) characterised the process that connects persons with tools and objects in the world as *the instrumental act*. Vygotsky's main interest in this connection was how the instrumental act turned around and became a *mental act*, and thereby influenced the subject's learning and development (see Figure 1).

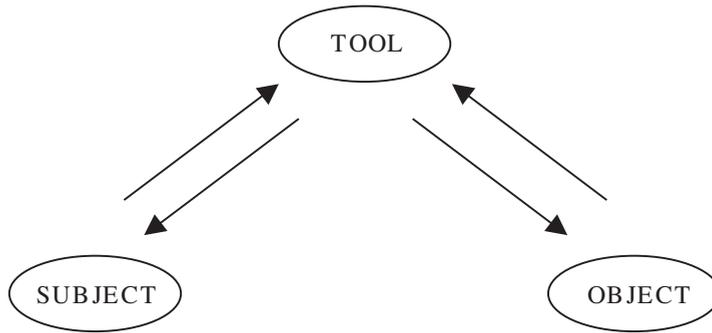


Figure 1. The model of how the instrumental act turns around and become a mental act

Vygotsky's theoretical focus was primarily on humans' *psychological* functioning with mental tools (i.e. oral and written language, models, blueprints, and number systems). It is the mediation of these mental tools that especially influence humans' psychological relation to the world. He wrote:

The inclusion of a tool in the behavioural process ... recreates and reconstructs the whole structure of behaviour just like a technical tool recreates the entire system of labour operations. Mental processes taken as a whole form a complex structural and functional unity. They are directed toward solution of a problem posed by the object, and the tool dictates their coordination and course. They form a new whole the instrumental acts ... The psychological tool changes nothing in the object. It is a means of influencing one's own mind or behaviour or another's. It is not a means of influencing the object. Therefore in the instrumental act we see activity towards oneself, and not toward the object. (1997, p. 87)

In this quotation, Vygotsky focuses on the change in the subject. I want to take a step further than Vygotsky does in this quote by focusing on the change both of the object and the subject in the conceptualisation of the function of the instrumental act. The processes by which humans interact with and regulate objects and mental processes cannot

be separated in understanding human learning. A clear distinction between material or technical tools as mediating in a way that is qualitative different than mental tools is not possible because all artefacts and tools have a mental as well as an action aspect that is related to the material world in one way or another. The unity of the mental and material aspects of an object is important for understanding humans as cultural beings taking part in social practices to which they contribute and are influenced by.

This point is put forward very distinctively by Marx Wartofsky in his theory of how human's relation to the world is mediated by artefacts. Like Vygotsky he uses the concept of tool as mediating between person and the world but he extends the concept of tool to include all artefacts and extends the understanding of acting to include perception as well. His main point in this connection is that cultural artefacts influence the way human perceives their environment, and thereby how they act and transform the environment. Furthermore Wartofsky describes artefact as "*objectification of human needs and intentions already invested with cognitive and affective content*" (Wartofsky, 1979, p. 204), and thereby uniting both the material and the mental aspect of tools/artefacts.

Wartofsky's explication of artefacts as the objectification of human needs and intentions is very important for understanding learning not only as a cognitive phenomenon of changing persons' minds and capacities, but also as a change in the objects so that they attain both cognitive and affective content. This conception leads me to a reformulation of Vygotsky's model that object and tool both have to be seen as artefacts (i.e., cultural phenomena) because they both have to be seen in relation to a human's needs and intentions. The subject cannot experience the world as objects in themselves, cultural artefacts always influence the experience that forms a person's needs and intentions.

A question then is why some artefacts are objects for learning activity (i.e., are objects to act upon, influence, understand, or learn to handle) while others become tools for a specific person in a given situation? Why are some artefacts and others function as tools in this activity?

Based on Vygotsky's and Wartofsky theories I will analyse and argue for the following two aspects as important for a theory of learning: (1) that tools for a person has previously been objects for his or her instrumental acts and that the appropriating procedures with artefact/tools change the person's relation to the world, (2) there has to be some form of social practice that helps the single person to learn which objects can relate to his/her actual needs and motives.

In the following sections I will use these two aspects to structure my presentation. In the first section I will discuss how learning change the relation between person and the world (e.g., how an object become an instrument through learning activity) I will draw on both the cognitive and the social traditions in learning theory, and argue that cultural-historical theory integrate and extends these theories and thereby contribute to an understanding of the interconnectedness between subjects/persons learning

to act with tools and interpret artefacts and the conditions for this activity. An important factor in understanding a person's learning of instrumental and mental acts is the institutional traditions and practices that specifies both what are objects of activities and what are means of activities (e.g., in home, school, at work etc.) In the second section I will extend Vygotsky's model of the instrumental act and present a model that integrate persons' participation in different institutional practices. Institutional practice can be seen from a societal and from the participating persons' perspective. In the last part I will take the persons' perspective and discuss the interconnectedness between children's cognitive learning and motive development. I will exemplify how person's needs and intentions can become directed to specific object domains through school learning and that cultural traditions and value positions have to be taken into consideration to understand children's motive development.

Learning as Change in the Relation between Person and World

One important characteristic of human learning is action. Piaget (1962) has introduced action as a central factor in children's development. He has pointed to imitation and play as the type of action that leads to children's knowledge appropriation. Wood, Bruner and Ross (1976) also point to action as a key factor, but action that leads to learning has, in their approach been conceptualised within social relations where it is possible to *scaffold* the child's action. In this theory both acting (doing) as well as the social aspect of interaction constitute learning. Action and interaction aspects of learning are important, but in these cognitive theories neither content, nor context is conceptualised as anchored in specific societal or institutional traditions.

The difference between these theories and Vygotsky's theory can be found in the cultural-historical theory's explicit focus on the *acquisition of tool mediation* as the key aspect of learning. This competence takes place through social interaction between persons. Tool mediation is related to social practice in different types of institutions. Speech and communication are tool activities that are central in Vygotsky's theory to understand how the human psyche is created.

For Vygotsky speech was an important psychological tool, which was at one time a social and cultural element but also served to mediate social processes in the process of internalisation. Such psychological tools not only functioned externally/socially they mediate or regulate internally the action of mental processes. Vygotsky distanced himself from the suggestion that the social context of development was simply the objective environment. (Daniels 1993, 53)

With internalisation, Vygotsky meant transforming the external interaction to a new form of internal interaction, and not simply copying it, as it is sometimes interpreted. Luria (1961) in his experimental work showed how interactions were acquired by the child and gradually came to function as the child's regulation of his/her own activity. Luria conducted a series of simple experiments with 3-5 year old children. The children's task in these experiments was to learn to press a bulb at specific stimuli and refrain from pressing the bulb when other stimuli were presented. The experiments showed that young children can learn to control and inhibit their own spontaneous responses but also that their responses could be regulated by the child him/herself much earlier when meaningful explanations and word-labels were introduced together with the stimulus. In one experiment, the stimuli figures they should learn to differentiate were outlines that could look like small aeroplanes. It was explained to the children that they should only press when

a green light was shown and not press for the red light, because the plane should only start with the green light. This task was learned by younger children than when no explanation was given and no word labels were used. The most important result in these experiments was that the inclination to press the bulb, which the children could not control at the start of the experiment, could be inhibited when the children were asked to distinguish the cards with the figures by looking at the background, which were either yellow or grey. This could be done when this task was accompanied with the explanation that the children should look if the weather was sunny or rainy, because the plane could only fly in sunny weather. The youngest children became able to inhibit their spontaneous reaction to let the aeroplane fly and became able to control when the aeroplane had to leave the ground. The adult had the task in the first part of the experiment to give the weather forecast as either sunny or cloudy, and to control the reaction, but gradually the children could take over this regulation of their own responses. The children had acquired a procedure to guide their discrimination between the figures.

An explanation of how the child learns and become able to guide his/her own reactions is that the child internalises the process of external interaction that s/he has been part in. As shown in Luria's experiments internalisation is not a process that directly mirrors the external social relations but it is a transformed reflection of the external interaction. Internalisation starts on the intersubjective plane where the child interacts with other persons (in the idealised case between a child and an adult). On the intrasubjective plane, the child still takes part in a kind of interaction but this time the child take both the roles in the interaction, – the action role as well as the regulating.

What characterises human learning, if we follow the ideas of Vygotsky and Luria is that the person's relation to the world chang-

es because his or her possibilities for mental interaction change. Vygotsky has especially developed the idea of language as a mental tool, but he does not restrict mental tools to language, and it is important to understand that speech and communication as tool and procedures also change for the person. Language is not the same tool for small children as for young people and adults. Language as an instrument can change from labelling to meaningful description to metaphor through the child's intellectual development.

Content and Contexts as Conditions for Learning

Humans learn both procedures for tool use as well as how to produce tools. They also learn social procedures for interaction and interpretation of artefacts that characterise practice in different social communities and institutions. Production and use of artefacts and tools are necessary but not sufficient to conceptualise learning; the concept of context is also needed. Social theory has widened the spectrum of learning to include practice and traditions as a key factor in the child's formation of competence, knowledge appropriation and personal identity (Berger & Luckmann, 1966; Lave & Wenger, 1991). Through participation in different practice these both function as context for the child's learning and as content; the child encounter knowledge of the specific practices that s/he is part of.

Berger and Luckmann formulate a theory of learning that focuses on the child's socialisation into society while encountering practice and traditions for social interaction in home and school. In Berger and Luckmann's theory, the content of learning is conceptualised as knowledge of the world and of the child's position in the world that is encountered in the context of the child's everyday activities in the family and in the school.

Lave and Wenger's (1991) and Wenger's (1998) theory succeeded to combine everyday practical activity with general principles of learning. With Lave and Wenger's approach, social practice and production become central, and peripheral legitimate participation becomes the method to acquire knowledge, skill and identity. In this approach learning is directed at skill and knowledge that qualifies the person to become integrated into the social process of being accepted as competent. It is primarily the person's status and identity in the situated practice that is directly commented upon in this theory.

In both Berger and Luckmann's and Lave and Wenger's approaches, the content of institutional practice has become the object of learning activity. The social theory of Berger and Luckmann and the situated learning theory of Lave and Wenger support a view of learning as a change in a person's relation to his material as well as social world through acquiring competence with tools /artefacts in situated practice.

Vygotsky's model of the instrumental and the mental act can be interpreted as a 'germ-cell' for social practice. (See Figure 2). The material and mental acts can be seen as cultural procedures with artefacts (tools) that mediate between a person (subject) and the world (objects).

In the extended model of the instrumental act artefact/tools are seen as mediating between the person and the world, thereby it becomes possible to conceptualise learning as a change in a person's relation to his material and social world, using artefacts. The change in these relations is accomplished by the persons' appropriation of procedures with tools – mental as well as material – that also leads to the development of new motives.

The extended model of the instrumental act can be interpreted as a simple model of activity,

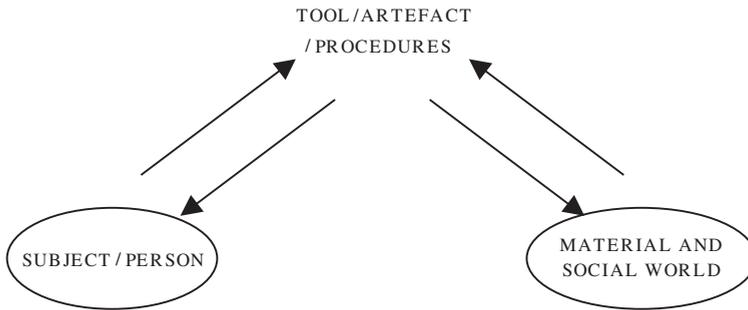


Figure 2: Extension of Vygotsky's model of the instrumental act to include procedures with artefact as mediating between the person and the social and material world

because it depicts historical practice as well as concrete practice. The historical aspect of activity is found in the concept of artefact/tool where the artefact is the result of humans' production and traditions. Furthermore the process whereby an artefact/tool comes to play a role in a person's life requires that other persons demonstrate, identify and pass on the procedures for using artefacts/tools and the context in which they are suitable. An artefact/tool belongs to a practice. This practice has to be actualised by person's participating in situated practice where the use of tools and artefacts can be passed on and appropriated by new generations. This creates a relation between the artefact and procedure in the form of tradition for practice with the artefact and the situated action in which the artefact is used in interaction with other persons. With this interpretation of Vygotsky's theory into a theory of activity I will take the next step to relate activity to different forms of practice in institutions.

Practice in Institutions

When practices are seen as important for understanding tool use, this implies that learning has to be conceptualised within a context where traditions and practices have to be seen as part of the conditions for learning. Learning

in school gives children procedures to handle a specific area of objects and artefacts; learning in home is related to other procedures and artefacts. Tools and artefacts and the practice they are connected to are part of the social field when a child enters the world and become appropriated by the single child through social interaction. The existence of a surrounding with tools/artefacts and specific procedures can be seen as both context and conditions for the person's development of his/her relationship to the world.

Differences in practices in different institutions give children different competence and a child's competence is evaluated different in the different institutions because the practice here makes different demands on the child. McDermott (1993; Varenne & McDermott, 1998) demonstrates this clearly in his research on how a child's learning disability is constructed differently in different institutional contexts. McDermott argues that the competence and reading skill a child demonstrate, or the lack of competence diagnosed as learning disability, is dependent on the context in which the child is acting. Adam, as the child is named in McDermott's observation study, changes and improves from being in a test situation, to being in the class situation and finally in an after school club situation. McDermott's example

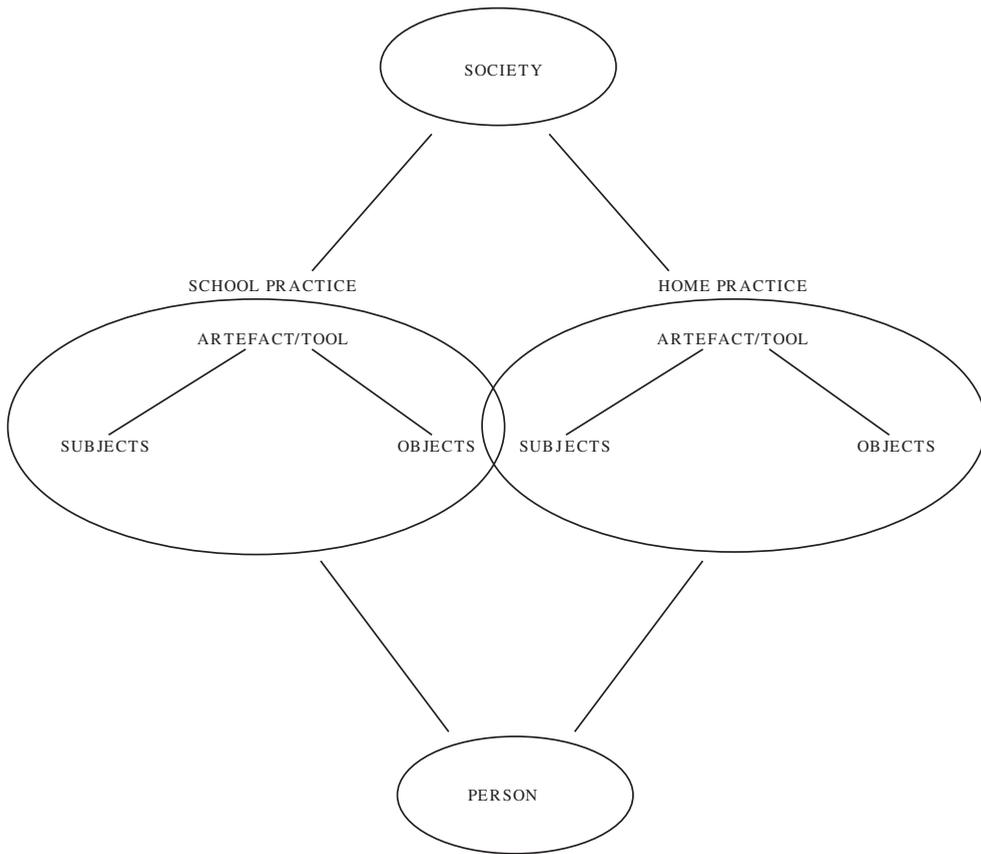


Figure 3. Vygotsky's model of the instrumental act included in a model of institutional practice that mediates between society and the persons that are members of a society

with Adam's reading problem can exemplify the necessity of understanding the dialectic between a child's competence and the practice he participates in. In Adam's case, the learning problem manifests itself differently in institutional practices. It is through participating in institutional practices that the child acquires capacities for conceptual and manual tool use and interpretation of artefacts. McDermott characterises the institutional activity and the child's activity as woven together so it is neither the child nor the institutional practice that creates learning or learning problems. Learning and learning problems are created through the inter-

action between the child and the cultural traditions realised in the situated practice of a given institution with specific children.

Institutions can be differentiated in accordance with the function they have in a society and for the members of society. The dominant institutions for children are home and school. This argument leads to an inclusion of the person's relations to the world mediated by artefacts and procedures into a more comprehensive model of the person's relations to a specific society mediate by practice in different institutions (see Figure 3).

Everyday activities with artefacts are quite different in home, day-care, school, higher education/professional education and work. Therefore it is important to differentiate between learning in these different institutions. Both the kind of knowledge and the methods of learning differ between home, school and work.

The view of learning as person's appropriation of procedures with tools and artefacts through participation in institutional practice and thereby also realizing practices and contributing to changes has to be seen from a societal perspective to understand the relations between a person that participate in different institutions, for some at the same time and for others successively. Practice is connected to cultural traditions; and cultural traditions in families and in other institutions is the foundation for their daily practice.

Cultural Traditions, Meaning Positions and Practice

Institutional practice is dependent on cultural traditions in a society that transcends the specific institutions. This transcendence take place through value positions that connects cultural groups in a society so that cultural traditions and values are generalised beyond the specific institution into more general cultural traditions. Diversity of practice in institutions such as family or school is dependent on diversity in traditions and life forms between different groups in society. Bourdieu (1979/1984) use the concept of life form and person's positioning in a field to describe how society can be characterised by traditions and value positions that are generalised beyond the specific institution. I have found these concepts relevant to understand how institutional practice is not only influenced by the persons that participate but also by the history that is stored in cultural traditions and the value positions that are attached to traditions. Examples of how different groups in a society can be character-

ised by different life forms can be differences that are connected to social class or to ethnic background or to types of work. I have named such traditions for life forms cultural traditions. What is important here is that a cultural tradition is not unambiguous connected nor to an institution in general or to a concrete institution. Let us take the family as an example. Here there can be a big variety of traditions dependent of which cultural traditions a family associate themselves with. This can be religious such as Jewish traditions or national such as Danish traditions or it can be class traditions such as working or academic. A concrete family can feel connected to several cultural traditions and thereby have value positions connected to several cultural traditions that can even be conflictual. This can be exemplified by Turkish families in Denmark that can have both value positions connected to their national origin and to the country they live in today (see Hedegaard, 1999). Different types of schools can associate to different traditions, such as an 'upper class' 'public' school or an alternative school, though the traditions that are state decided and law bound give a foundation that the other school traditions have to take into consideration to be allowed to function.

A society is created through the practice in its institutions and how they influence each other. A society has to be seen as an imagined entity as discussed in Anderson's theory (1991; see also Billig, 1998). Though imagined the society and its cultural traditions influence the actual situated practice in different institutions. School and its educational practice influences the participating persons as well as they through their realisation of practice influence the practice and contribute to change in practice and traditions. (See Figure 4).

Learning can be viewed both from the perspective of the child and from the perspective of society. The relation between state/society and the school can be discussed as curriculum and

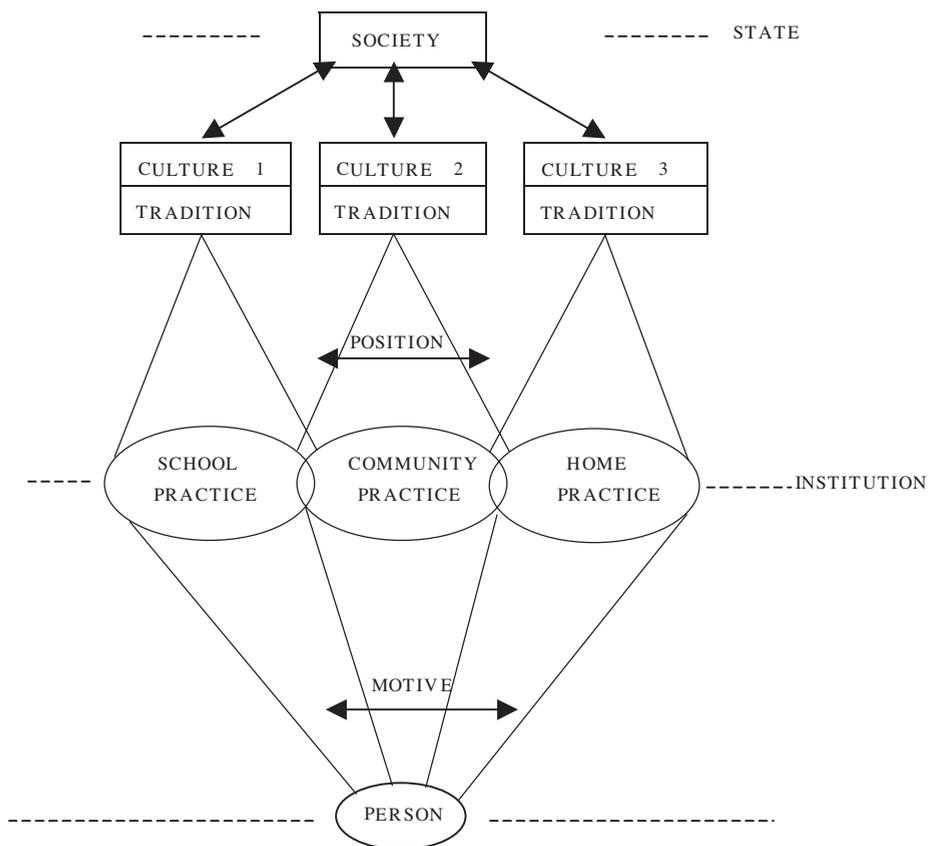


Figure 4: Learning through participation in institutionalised practice

regulated by school laws. In Denmark, for instance, experiments initiated by the state such as school experiments have led to changes in the school system, such as examination-free classes until eighth grade.

Learning and Development

From being in daily activities in an institution the children appropriate as well as contribute to the social-historical experiences that are accumulated in these practices, emotionally, motivationally as well as cognitively.

Each child appropriates knowledge and skill to master the demands that they meet which

is always a result of the child’s engaged activity in shared practice with other people (e.g., the appropriation of day and night rhythm, reading and writing competencies). Activities that characterise the different institutions those children participate in, in different periods of their life, leads to qualitative different periods in their development. Elkonin (1999) has presented this in a theory of child development where different periods in children’s development parallel the different institutions that dominate the child’s life. The first period is dependent on practice in home and daycare, and deals with the child’s emotional development and orientation to the world and takes place through direct emotional contact with

other caregiving person's in home and day-care. The second period is related to practice in school and deals with the child's orientation to the world more broadly and development of knowledge and roles in relation to other human beings. The third period is related to activity with peers and education that qualify for work; it deals with the close personal relationship and work relationships.

The development of motives for these three periods is always ahead of the development of cognition in each of the periods. In the early childhood period (the infant and toddler period), children's development of motives is related to their emotional contact with central persons in their everyday life. This results in development and mastery of the immediate and close everyday world. This mastery is the foundation for the next period, the middle childhood period, which is the kindergarten and early school age. The children's emotional and motivational world broadens and they develop motives for mastery of the adult world in this period. The learning motive develops and becomes dominating in this middle childhood period. Here, the children's knowledge is characterized by acquisition of methods and competence that in school are seen as central for entering the adult world. In the third period, the late childhood period, the secondary school age and youth period, the child's motive development is directed towards engagement in other persons and society. The dominating motive is togetherness with classmates, to be socially accepted and at the same time an orientation towards self worth. The child's/youth's cognitive development can be characterized by mastering of methods for reflection about personal relations, work and societal relations.

Learning in school

In the second developmental period the child's learning is directed towards mastering the skills that characterise the adult world. The

motive of play activity is replaced by a real wish for acquiring skill. Most children who start in school expect to become able to read and write, if they do not already do this when they start. They do not want to play that they are 'reading'; they want to acquire the competence. The dominating motive becomes the learning motive. In this period the child's spontaneous concepts become extended through appropriating subject matter concepts. But when these subject matter concepts become integrated with the child's everyday concepts from home and community life, their everyday concepts are raised to a new level in which real cognitive development takes place.

The change in view from the child as a recipient in learning situations to the child as a participant in learning, and the change in view from learning as a cognitive process to an activity leads to new forms of teaching practice. Each child becomes involved in a reciprocal process in which his/her motives and personality plays a part in the interaction with the other persons in the classroom – the teacher and their classmates. This has to be considered in teaching. The problem is then to create classroom teaching for the whole group of children, a problem that is possible to solve through children's cooperation in investigation of problems that are both interesting for the children and relevant for the subject matter area taught.

Learning subject matter content in school is connected with children's development of motives and also with value positions connected to the activities. What has to be learned is connected to objects and practice that are "*objectification of human needs and intentions already invested with cognitive and affective content*" (see earlier this article p. 22).

To demonstrate this, I will use an example from my research connected to a teaching experiment based on 'the double move' approach in school teaching. (Hedegaard, 2002). The central ideas in this teaching experiment were that it is important (a) that teaching create a

connection between subject matter knowledge and children's everyday concepts through building conceptual models, (b) that children are active researching concrete topics using conceptual models as tools, (c) that teaching can create wholeness and perspective between the core relations of a subject area and the children's research knowledge.

The teaching experiment took place three hours a week; the rest of the time was traditional teaching. The theme of the teaching experiment was 'the historical change of societies'. The questions that started the children's research activities were: "How can it be that people live differently in different places of the world?" and "How can it be that people have lived differently in different historical periods?"

The children gradually became able to use core models to analyze relations (e.g., between tool use and ways of living and later between division of work and structure of society). The question here is how children's participation in these activities created motives for the children and how this motive development was influenced by value positions that the children experienced in their activities.

All the children participated in the same learning situations but even if they became motivated by the same activities the content of their motives cannot be seen as identical. I will outline the difference in two children's motive development over two years of experimental teaching in social history (Hedegaard, 2002).

Two students' learning and motive development: The contrast and similarity between Morten and Cecilie

The learning activity of two students, Cecilie and Morten, was followed and will be sketched here in relation to development of their motives.

Cecile started out to be the most interested and motivated child in the activities in 4th grade and this continued into the first month

of 5th grade. Cecilie's interest and engagement was clear throughout the two years of experimentation. It is demonstrated for example in the model she made to a friendship class in New York (see Figure 5). The contact with this friendship class was made through a researcher who worked with this class in New York City. He suggested that they send some of their models to the class in New York. Cecilie suggested that they used English in their texts to the models. She was both the initiator of translating the descriptions in their models, and of writing small letters to the children in their friendship class. Since the class has just started to learn English this was a rather complicated and demanding task. She engaged in the task and helped several of her classmates translating along with the teacher as a kind of helping teacher, using a dictionary.

In fifth grade after this event this very helpful girl started to be critical in her relation to her classmates and especially rebellious in relation to the teacher. A new motive started to become dominant that changed her relation to the teacher and her classmates. She was still primarily the initiator of the activity in her group, like the previous year, and she never presented herself as a leader of the activities. Perhaps her rebelliousness came from the conflict that she wanted to guide and become the leader but did not arrogate this role enough. Her motives in fifth grade were still characterized by a constant subject matter interest, but at the same time she became more oriented towards independence and self-determination in relation to the teacher.

In fourth grade, Morten was interested in both the class activities and his classmates. But he did not like that his group partners imitated him when he drew models (in most of the activities the children worked in a permanent group of four or five), or when his best friend wanted to look in the books he was reading. He was interested in the differ-

He came to function independently and self-determined. Cecile started out with a cooperating and caretaking orientation towards her classmates but gradually rebelled against the caretaking role. It seemed, instead that she wished to be recognized as a competent and independent person; she guided and decided in her group but she had trouble combining this with the caretaking role that she had brought with her from fourth grade.

Both children developed a motive towards peers but in different directions. To understand the difference in the children's orientation we have to see further than their participation in practice in the school and also integrate the context understood as cultural tradition and value positions that transcends the class in which learning and teaching took place. For Cecile and Morten, gender traditions and values of presenting oneself as competent and taking the leader role influenced these two children's activities.

Conclusion

I have argued for a conception of learning that elaborates Vygotsky's idea of tool mediation as the core of human learning. From this central conception it is possible to explicate both persons participation in practice and traditions as key concepts in a model of learning activity. Practice is the center but both a societal and personal perspective have to be integrated as shown in the model. The societal perspective indicates the importance of cultural traditions and value positions that transcend specific practice. Cultural traditions and connected value positions influence a persons development of motives for appropriating competence. The example should illustrate how this influenced the individual development of two children that both had been very motivated for learning. Orientation of their motives influenced their interests and intentions for entering into relationships with the

teacher and the other children in the class activities. The concept of cultural traditions and connected values was not formulated clearly when the experimental teaching was planned and proceeds. But afterwards research about the influence of gender (Walkerdine, Lucey & Melody, 2001) ethnicity, (Ogbu, 1992; Gibson, 2001) life conditions (McDonald, 1999) and class orientation (Wiley, 1977) have made me conscious about how much cultural traditions from outside the classroom influence children learning. A conceptualisation of this viewpoint is integrated in the approach 'radical local' teaching and learning developed in cooperation with Seth Chaiklin (see Hedegaard & Chaiklin, 2004).

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