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Communication between teacher and child in Early Child education: Vygotskian theory and educational practice

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Abstract

The idea of cultural development of a child as introduced by Vygotsky has informed much educational research and theorizing in recent decades. However, in the West it to a large extent tends to be put in the background of the investigation of how teachers or other more experienced participants support children's development, with the concept of scaffolding in the foreground. In this article we review original research and educational psychological theorizing from Russia, work that is less known in the West, discussing the problem how teachers can enter into this developmental field to challenge and support children's development.

1.Introduction

The writing of Russian psychologist Lev Vygotsky (1896-1934) has been tremendously influential to educational thought in recent decades. His cultural-historical (aka sociocultural)

theory of human learning and development provided a critical voice and alternative to individualistic notions prevalent in developmental psychology, despite being formulated in the 1930s in critical response to another strand of psychological theorizing, reflexology (and its American counterpart, behaviorism). In brief, this theory conceptualizes human learning and development as grounded in cultural-historical practices. Through participating in cultural practices, children come in contact with and gradually start taking over these practices and its cultural tools. Communication with others precedes communication with oneself, that is thinking. Through participating in communicative practices and taking over its tools, natural or elementary psychological functions are transformed into higher, culturally-based forms of functioning. Communication rather than, for example, exploration, becomes the mechanism of learning. This focus on communication puts the importance of other participants to the forefront to our understanding of children's development. Of particular importance to the development of uniquely human forms of knowledge such as what Vygotsky (1987) referred to as scientific concepts is the communicative encounter between teachers and children.

One of the scholars who introduced Vygotsky to Western readers, Jerome Bruner contributed to this tradition of thinking with, among other things, when he together with David Wood and Gail Ross provided a useful metaphor for describing how adults can support children in developing new skills. In their 1976 article, Wood, Bruner and Ross suggested this process be conceptualized in terms of scaffolding. Basically, this metaphor is used to speak about the changing division of labor between an adult (teacher or other more experienced participant) and a child. The idea is to provide some structuring aid in order for the child to be able to gradually take over the problem solving in an independent and voluntary manner. A key principle is to support the child in solving the problem rather than solving the problem for him or her. Scaffolding has become a widely used concept in educational research and theorizing

and in educational practice. Its wide use has resulted in critique being raised against its usefulness to educational practices, often on the argument that its formulation in terms of dyadic interaction is not suitable to conceptualize teaching in preschool and school with many children/pupils and that education in these practices are fundamentally different from the practical task studied in Wood et al.'s (1976) work (e.g., Mercer, 1995; Stone, 1988; Wells, 1999). Still, the concept continues to be useful to educational thinking (e.g., Elbers, Rojas-Drummond & van de Pol, 2013; Sun & Rao, 2012).

The concept of scaffolding was not used by Vygotsky himself, but Wood et al.'s (1976) concept fits well within this line of thinking. According to Vygotsky (1998), to understand human learning and development, we need to laborate with not only one but two concepts of development, what he calls the actual and the potential level of development, respectively. This difference denotes what the child is able to do in his or her own, on the one hand, and what he or she is able to do with some support from a more experienced participant, on the other. This difference is conceptualized as the zone of proximal development (Vygotsky, 1987). It is precisely in this developmental 'space' that teachers and others can contribute to developing the child's knowledge and skills. Conceptualizing how they do so is what Wood et al. (1976) propose the metaphor of scaffolding to clarify. While the concept of scaffolding has been, and continues to be, widely used in educational discussions, the concept of the zone of proximal development is less frequently elaborated on. It tends to stay in the background of research with, for example, scaffolding in the foreground. This may be due to the latter being easier to study empirically than the former. However, while this may be the case in Western research, in Russian educational psychological research, the concept of zone of proximal development is at the forefront of attention.

In this article we aim to contribute to the Western scholarship on how to understand learning, development and education from a cultural-historical perspective, by reviewing empirical studies and theorizing on the zone of proximal development in the context of early childhood education. The article is structured in the following manner. First we present some tenets of Vygotskian cultural-historical theory. Then we present the concept of the zone of proximal development and, through reviewing empirical studies and theorizing, differentiate this concept in terms of how teachers (and others) can provide ample challenge and support to the child's development. Finally we discuss educational implications of our review.

2. Cultural learning: Transforming natural functions into cultural forms

Interaction between an adult and a child is primary to theory of development of higher psychological functions developed by L. S. Vygotsky. A key difference between a child and an animal lies in the fact that the child develops in a cultural environment. As it was emphasized by Vygotsky, the higher psychological function was nothing else but a transformed natural psychological function. This transformation is performed through the acquisition of cultural means, a medium for which is an adult. One of the spectacular examples with which Vygotsky illustrated this process was the formation of indicatory gesture (Vygotsky, 1983). Initially it appears as a failed grabbing movement – before reaching a certain age, a child stretches forward trying to grab even the objects he/she cannot reach. What does an adult do in such a case? Normally one gives to a child this desired thing, often accompanied by verbalizing what the adult considers to be the child's intention. In this way, the adult (without necessarily having an idea about it) performs a very complex cultural action – he/she assigns a cultural meaning to a natural child's movement. An adult is so to say, sending a message to a

child: “If you move like that I will help you to get the thing you’re interested in. That very thing you’re trying to grab unsuccessfully”. Progressively, this movement less and less resembles a grabbing attempt and it is transformed into an indicative gesture: a child does not try to take an object him/herself but through a gesture addresses an adult. What previously was a failed grabbing movement turns into a mean of communication of a child with and adult (or, to be more precise, a mean, through which a child manages adults’ behavior). A child turns an adult’s attention to the interesting object. That is how the higher psychological functions debuts on “the stage” – it appears between people. This is the Vygotskian law of socio-genesis (Vygotsky, 1998). For a while, indicative gesture keeps successfully executing its function – until the moment when an adult (the one who formed the gesture, as we have already mentioned) starts prohibiting its usage. In Russian culture this is normally grounded with appealing to courtesy: “It’s not good”, they say, or, which is closer to the conceptual construct of Vygotsky: “It’s uncultured”. Why does the thing that was considered “cultured” yesterday today becomes the very opposite? An adult starts solving another educative problem – to stimulate the development of speech as a more functional way of communication. For a while, indicative gesture seems to disappear from a child’s life – there is no need in it anymore, its place is substantially occupied with a word. However, soon the gesture reappears “on the stage” – with a special significance and forces it to come back when a child starts to learn reading and writing on purpose. This time the function of indicative gesture is to organize the child’s own attention – this gesture becomes a mean of mastering his/her own attention, transforming it from a natural and unconscious into cultured, conscious one (see also, Tomasello, 1999; Rommetveit, 1985). Thus the main rule of development of higher psychological functions gets elaborated as follows: “Every function appears on the stage twice within cultural development of a child, i.e. in two dimensions: firstly, in the social one,

secondly, in the psychological one; firstly inbetween people, as an interpsychic category, then inside of a child, as an intrapsychic category”.

What is important for us is that in the very beginning of this longtime process there is a natural action of a child. If he/she did not perform that initial failed grabbing move, an adult would have had nothing to develop. After all, as Vygotsky wrote, “culture itself does not create anything, it just uses the things given by nature, transforms them and harnesses to humans” (Vygotsky, 1983, p. 126). Therefore, accordingly to Vygotsky, an adult and a child perform as equal partners in the child’s development. However if in case with formation of primitive (as an indicative gesture) means it happens within extemporaneous cultural development, when more sophisticated means are concerned, an adult has to act with a lot more delicacy. This is the main challenge of developing education, from our point of view. It is much simpler to form this or that skill of a child than to capture and transform his/her initiative activity. The temptation to replace that statement by Vygotsky: “Education is good only when it goes ahead of development” (Vygotsky, 1982, p. 252), with a false formula: “Education goes ahead of development and leads its way”. That means, education becomes a developing one only when it captures and transforms what is naturally inherent for a child. This is when a need occurs to introduce a concept of the zone of proximal development (ZPD), describing this developing interaction of an adult and a child. Psychological sense of this concept lays in the orientation of an adult on the maturing psychical function (i.e. on the readiness of a child to acquire a cultural mean). In terms of education the zone of proximal development is often described as “the action that child is able to manage with the adult’s help”. But the help of an adult good only when he/she offers to a child a cultural mean able to transform a child’s natural psychical function into a higher one (but not when an adult completes a part of the “job” of a child instead of the latter). Therefore, in the framework of developing education,

the content of the communication between an adult and a child pertains to the acquisition of cultural means.

In particular, an important influence on the development of pre-school education has been the ideas of Vygotsky about the development of the child's imagination and play. From the viewpoint of Vygotsky, play requires imagination; there are all the major neoplasms of age, including arbitrary, the capacity for goal-setting, self-awareness etc. "Play continually creates demands on the child to act against immediate impulse. At every step the child is faced with a conflict between the rules of the game and what he would do if he could suddenly act spontaneously. In the game he acts counter to the way he wants to act. A child's greatest self-control occurs in play" (Vygotsky, 1978, p. 99). The dialectics of play, the duality of a playing position creates the background for the development of the symbolic function. In play, the child, according to Vygotsky, is "over himself", so his or her behavior can be self controlled by rule, introduced by the child. Playing is extremely interesting to the development of the child in that playing activity not only allows the child to apply his or her existing achievements, but also helps the child to grow.

3. An adult as a mediator between a child and culture

3.1. Responsiveness to the child's perspective

The concept of ZPD (meaning the content of the problems a child can resolve only with the help of adults, but after gaining an experience of joint activity he/she can do it independently) appeared to be both productive and dangerous for modern psychology of education, particularly in Russia.

On the one hand, ZPD became a powerful impulse for creation of pre-school educational programs. On the other hand, it resulted in ignoring of specifics and inherent value of the childhood, expansion of education of the school type to kindergartens and, consequently, dominance of traditional way on interaction between a child and an adult, when an adult sets an example and a child is meant to follow it. In this context one can see a distinct significance of a special research line in Russian psychology of education that explores a question about those neo formations, being specific for the preschool childhood as an age of establishment of initiative and autonomy, and implying a different way of interaction with an adult, supporting a child's initiative and autonomy. This refers to a search for such a content that due to its unique "childishness" is important and interesting for an adult, too. That's why while working with such a content an adult is shorn of his status of "a source of truth" and gets involved into the interaction as an interested partner. Moreover, as far as while solving problems dealing with imagination or creative thinking children may surpass adults, those can perceive communication with a child as a resource for their own development. But it cannot happen unless an adult is able to take a partner's position, i.e. become open for a child's responses (what is often referred to as being responsive to the child's perspective; Sommer, Pramling Samuelsson & Hundeide, 2010), be capable to discover novelty of his/her solutions and help a child to discover that novelty in his/her peers' answers. Such a medium for a preschool age is, in particular, child experimenting and creative thinking declaring itself while solving problematic controversial situations and storytelling.

However, responsiveness to the child's perspective can be understood in a different way. V. Davydov demonstrated that theoretical concepts are in the ZPD of elementary school students: "Every important theme of the program begins with a special full-scale introduction of children into those situations in which there is a need for relevant

concepts of theoretical nature. Making certain objective actions, indicated by the teacher, pupils find and record such important features of objects, orientation on which allows solving any problem of the class associated with this or that similar situation” (Davydov, 1972, p. 375). For example, interacting with real objects, children learned to compare them according to particular characteristics. Here they established their equality or inequality. Then, they recorded the results in the generalized alphabetic form. Determination of the generalized relations and their record in the ”pure” form has allowed studying the properties of these relations.

L. Venger showed that a preschooler is able to operate with visual models. According to his theory, visual model is the sought key tool, and development of abilities for visual modeling was stated as the main line of cognitive development (Venger, 1986).

Responsiveness is interpreted here as a willingness of an adult to see the possibility of a child which may be developed under certain educational conditions. It is necessary to stress that these researchers are not talking about the artificial acceleration of the development of the child, but about the abilities which grow in a typical child’s activities: block designing, drawing, understanding texts and so on.

3.2. . The role of an adult in child experimenting

An adult plays a special role while organization of child experimenting: he/she does not communicate knowledge but creates situations where children discover their unawareness. Specific feature of the interaction of a teacher with a child while the experiment consists of intellectual provocations performed by adult, directing cognitive activity of a child, but by any means not pushing him/her to “correct answer” (Poddyakov, 1977).

Firstly, in order to do this, an adult has to create an environment empowering the child's cognitive activity. Secondly, one is to provoke child research through discovering a problematic situation making children stunned and amazed due to its controversy with their previous experience. Thirdly, the role of adults in this experimenting lays in deepening the problem: questions about cause and effect connections help children to pass from description of the situation to proposing hypothesis. Fourthly, an adult asks questions about possible course of events, assisting a child to build a hypothesis basing on anticipation. Anticipation, according to research works by J. Piaget, L. Elkoninova and I. Shiyana, actively develops at the preschool age, as the representative space of children is developing as well. Fifthly, an adult suggests to a child to match his/her expectations with what he/she sees while testing. An important feature of experimenting is the appearance of "unclear knowledge": received evidence do not match the hypothesis completely, it's always necessary to understand if it confirms the latter or rejects it. In general it could be said that an adult stimulates child research activity playing a role of facilitator, but not of an instructor. The task of adults is to help children to cope with the uncertainty, discover mismatches of initial hypothesis with the experiment result and not be frightened with it. An adult gets involved in the experimenting head to head; he/she introduces hypotheses together with children, gets surprised, solves a problem of interpretation of that indistinct data. In this case a child gets the opportunity to cope with the situation of uncertainty without being afraid to make a mistake.

3.3. The role of an adult the development of child's creative thinking

This necessity of elaboration of a special type of interaction between a child and an adult was discovered by researchers, working on programs dedicated to the development of creative thinking where children were to solve divergent problems. Particularly, a series of tasks for developing creative (dialectical) thinking of preschool children has been designed,

lead by N. E. Veraksa. Dialectical thinking is understood as an ability to handle relations of oppositions, discover their unity and mutual transitions in the world around. Research revealed that dialectical thinking is a mechanism as of scientific or artistic creativity, and also described its dynamics. At the preschool age children are capable of solving problematic controversial tasks, but later on, in the course of school education supporting only formal logical solutions, this ability starts to extinguish. Its amplification is possible however providing a special educational situation where children are to solve divergent problematic controversial tasks. In order to initiate children's thinking, it is essential for adults to take a special position: they involve a child in solving a problem helping to discover oppositions in the situation. The specific type of tasks was so called "dialectical problem" where a child is to perform a mental action uniting oppositions. The role of an adult while submission of problems of this type, is to enhance first one opposition, then another. A teacher either organizes a discussion assisting children to reveal a mismatch of positions in the group or strengthens one or another position presenting certain reasons. Thus, a mental problem is unfolding in the external aspect: children express both arguments and counterarguments. In this case they discover limitedness of individual statements and start looking for solutions, uniting oppositions. The mean, capable to capture oppositions in such a dialog, is a dialectical visual scheme (black and white squares) which helps children to hold positions in the dialog and see their simultaneous validity.

Forming experiment (Veraksa, Belolutskaya, Vorobyeva, Krashennikov, Rachkova, Shiyani I. & Shiyani O. (2013), conducted in 2009-2011 with 4.5-5 year old children showcased that solving of problems of this type activates creative thinking of preschool students, as a result of 2-year experiment, significant differences were revealed in the experimental group. If such an experience is not organized on purpose, this ability to solve

contradictory situations not only does not grow at preschool age, but even decreases in the primary school (Belolutskaya, 2006).

4. Amplification of child development: Child-adult partnership.

In general achievements of Russian psychology of education allowed us to describe a model of interaction between an adult and a child promoting amplification of child development. This model includes orientation on child initiative and support of the latter, organization of a dialog while solving a problem in a group of children, offering children a mean allowing them solution of the problem (a visual model or a scheme).

A child's opportunity to be involved in the interaction of a partner type was explored by E.V.Subbotky (1981). Despite the established tradition in Russian education, when an adult performs as an example of global copying, this researcher claimed that "independent behavior" of a child could be formed already at the preschool age, when a child made a choice based on his/her personal experience but not under the pressure of the authority of other person. E. V. Subbotky proposed to distinguish independent behavior as a skill of conscious selection of a rule according to the situation but not under the pressure of people around, because of a "caprice": he named the first type of behavior "personal", the second one – "selfish". Independent behavior is connected to rejection of "globally copying position" of a child and celebrates a step forward in his personal development. Diagnostics of independent behavior took place in specially organized situations where children and an adult assistant had to follow an instruction acquired earlier, and the adult violated it. The subject of the analysis was the extent of how much children were aware of that fact and "held on" to their own line of behavior, or if they started to follow the example in spite of its obvious mismatch with the initial rule.

In the forming experiment of E. V. Subbotsky, two adults were working with children simultaneously, taking different positions regarding children: the first adult behaved in more traditional teaching manner and the second played an altruistic role. That means that he often did mistakes and children acted as “examples” and controllers towards him, alongside he rejected any sanctions, both awards and punishments.

Results of that forming experiment showed that due to interaction with adults performing different roles in communication, first, the coefficient of independent behavior of preschool children increased, second, their spontaneous creativity enhanced, too; they started to create more variative pieces, demonstrating intellectual initiative. It is interesting that the attitude towards the adult “mistake maker” were contrastive: initially some children reacted on his soft, sanction-less behavior aggressively, violating discipline etc. Afterwards, attitude of those children became more tolerant: researches introduced the hypothesis that “altruistic”, non-punishing for being treated badly, adult appeared significant for children.

This idea to offer an adult to take a “weak” position could seem questionable, but the appearance of such an idea is explained, first of all, with an attempt to find a kind of counterweight for established practice of authoritative interaction in preschool education. At the same time it is important to emphasize a positive aspect in this characteristic of a new type of communication of an adult with a child: this is the delegation of an opportunity to control and estimate another person, to a child, i.e. to have a more subjective position. As it was mentioned above, such an equal position of an adult is natural and justified only in case when an adult and a child are dealing with special “subjectness” – the problems requiring imagination and experimenting, controversial situations, i.e. with all kinds of situations lacking clear-cut solution and demanding image thinking.

5. Research and early childhood education practice – Divergent models of communication

However it is necessary to say that daily practice of Russian preschool education in majority of cases remains being teaching in a reproductive way. Researchers mention (Rubtsov & Yudina, 2010), that in nowadays Russian preschool education serious influence belongs to so called “summary” programs where “knowledge” and “skill” referred content was elaborated in details and documented in summaries, so they prescribe certain forms and methods of conducting classes. Such programs direct a teacher on reproduction (sometimes even step by step) of those summaries and registered techniques. Certainly, ultimate implementation of “summary” programs is not so often performed now, but still in modern Russian preschool education one can clearly feel the influence of so called “Standard program of teaching and upbringing in a kindergarten” which was officially taken on board by all USSR preschool institutions up to 1991. That program completely ignored individual features of children; it was distinctly focused on acquisition of object knowledge, skills and capabilities. An essential specifics of such programs is their orientation on a teacher, not on a child. In this kind of educational process all initiative belongs to a teacher, education is more focused on the gradual formation of mental and other actions of children (perception and reproduction of texts, arithmetic etc.), and not enough - on the child's individuality. The content of education is registered and does not depend nor on the abilities of children neither on concrete situation in an infant group.

An important symptom of acuteness of this problem is the absence of large-scaled research on communication of adults and a child. A research performed by G. A. Tsukerman (Tsukerman, 2010) appears to be of some interest. She claimed that teaching always stimulates child development; however, depending on the position of an adult, various

features of a child are being developed. G. A. Tsukerman chose “communicative trines” as a unit of analysis of a dialog between a teacher and a child: 1) adult’s initiative statement 2) the answer of a child 3) responding statement of an adult (analyzing a minimum of three consecutive turns of utterance is today established as a common principle; see also, e.g., Wells, 1999). The analysis of trines was executed in the framework of two educational systems: traditional school education and so called “developing education”, dedicated to formation of academic independence of children of junior school age. It was discovered that in the first kind of communication an adult mostly presented an example, motivated the child to reproduce it and provided dosed assistance which gradually decreases while a child acquires that example. In another case a child was not given any ready examples, an adult created situations where common schemes did not work out and one had to search for some new options, he/she motivated children for a discussion and looking for new ways of acting. In the first situation even if adult provided a child with support and acceptance, those support and acceptance were mainly focused on maintaining of obedience and studiousness. In the second model an adult supported that very readiness to doubt, set a question and offer non-standard solutions.

That research by G. A. Tsukerman has a qualitative character: characteristics of two types of communication with a child within educational process are provided, but statistical evidence is lacking concerning the extent of their prevailing in daily educational practice. However according to experts’ evaluations, the first (reproductive and supporting) style is present in primary school in overwhelming majority of forms. Despite the fact that this study was conducted in primary school, its results can be considered significant for preschool education as well. At preschool age those features of communication of adults and children appear in even more exaggerated fashion. E. V. Subbotsky wrote that “the process of

upbringing is executed in a form of authoritative communication where a teacher demonstrated only one side to children, that one where he/she performed as a perfect carrier of social experience, an example for global copying. The other side, inherent for every human being, including hesitations, doubts and mistakes, remained carefully concealed from a child”.

Overweight of this model of interaction with preschool students in kindergartens of the Russian Federation has deep social and cultural reasons. One of them is the focus on purposeful teaching of a child at the preschool age, often resulting in expansion of school content into preschool education, and communication where the initiative belongs to an adult almost completely. Alongside the techniques developed by Russian scientists for children to help them in acquisition of cultural means did not change large scale practice or lead to alteration of the methods of interaction of children and adults from directive to facilitating ones. More and more attention has been paid to the organization of communication of children and adults for the last few years.

Conclusions

In this article we have reviewed original research on the communication between teacher and child in Early Child education based on Vygotskian theory and its implementations into the educational practice. These studies of teacher-child communication, can support the child’s conceptual development. has been discussed in the framework of Vygotsky’s theory and his concept of ZPD.

A key tenet of cultural-historical theory is that it links the development of the child to the development of cultural tools and their use in the interaction between the child and adults and peers. On the basis of our analysis we argue that it is further important to understand what kind of cultural tools are in the zone of proximal development of preschool children when

they learn different contents and what kind of child-adult or child-child interaction stimulates the appropriation of cultural tools and subjectivity (an active position) of children. Further empirical research on different forms of child-adult interaction is necessary to understand whether, and if so how, such contexts provide a zone of proximal development.

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