

The zone of proximal development in play and learning

Pentti Hakkarainen

Ph.D. in Educational Sciences, professor at Kajaani University Consortium, vice dean at University of Oulu pentti.hakkarainen at oulu.fi

Milda Bredikyte

Ph.D. in Educology, assistant at Kajaani University Consortium, University of Oulu milda.bredikyte at oulu.fi

The concept of the ZPD is characterized in a different way in two separate contexts (school and play) in Vygotsky's cultural-historical psychology. Creative and motivational aspect of learning is emphasized in development supported by play. In play context personality development is focused on and development of psychological functions in problem solving at school. We proposed an extended concept of the ZPD, which integrates the two definitions and includes an additional distance from potentials to personality changes. In play development from the crisis of the third year to the next crisis at seven we suggest three different types of the ZPD depending on the play initiatives.

Key words: the zone proximal development, play, and learning.

Introduction

The concept of the zone of proximal development (ZPD) is perhaps the best-known innovation in Vygotsky's work. He adopted the term from others, but gave it a new life in his theoretical framework. This theoretical elaboration allows different interpretations and uses of the term. A large variety of interpretations have stimulated attempts to trace trajectory of the concept in Vygotsky's thinking. Daniels [4] collected evidence for supporting the argument that a clear change took place in Vygotsky's own emphasis of defining this concept first in terms of assessment and later instruction.

An enigmatic and difficult aspect of the ZPD in western psychology and education is the social dimension of learning and human development. In many cases the western metaphorical equivalent of the ZPD «scaffolding» [51] has simply been interpreted as a teacher's support of cognitive learning of an individual student. In many cases the original new emphasis in Vygotsky's elaboration of the ZPD i.e. the relation between learning and development is understood as learning process leading to results (solving a problem or task). Thus developmental impact of learning is eliminated from the original concept. Individual learning is often located in brain structures and an impression from recent research is that the brain is learning instead of human beings [15, 17].

Elaboration of the concept of the ZPD towards socio-cultural understanding has taken place by tracing changes in Vygotsky's own use of the concept [4] or analyzing its historical roots [43]. An important discovery in Vygotsky's elaboration from the point of view of education in the modern world is the possibility of virtual support in the ZPD. Vygotsky writes:

When a school child solves a problem at home on the basis of a model that he has been shown in the class, he continues to act in collaboration, though at the moment the teacher is not standing near him. From a psychological perspective, the solution of the second problem is similar to the solution of the problem at home. It is a solution accomplished with the teacher's help. This help – this aspect of collaboration – is invisibly present. It is contained in what looks from outside like the child's independent solution of the problem. [49].

The possibility of invisible presence of the teacher in the pupil's life gives reason to ask how other people or situations are invisibly present in problem solving? As a matter of fact Vygotsky did not limit learning to school or teacher's immediate guidance. If we include other people's models or other situations to our learning concept, there will be the possibility of multiple and even contradictory supporters in individual and collective zones of proximal development. To master the complexity of understanding of the ZPD we have to connect this concept to other concepts in Vygotsky's theory of human development, which he did not do himself.

Relevant theoretical constructs are «general law of development», «development in terms of drama», and «social situation of development» [48]. We have to move from the term of the ZPD to the concept as Veresov [44] stated.

There are several attempts to extend the western understanding of the ZPD from teacher's scaffolding in the classroom. An example of expanding the context of the ZPD is Valsiner's [41] redefinition by dividing it into two parts: the zone of free movement (ZFM) and the zone of promoted action (ZPA). The ZFM is meant for a more detailed description of internal and external structuring of a child's

access to the environment and the ZPA explains the regulation of the developmental process. The background of the division was Valsiner's argument that emerging psychological functions can be accomplished in two ways: by individual activity and by social guidance. Valsiner [42] argues that his solution allows using the same concept of the ZPD both for the analysis of play and teaching — learning process. We claim that this is a partial solution, only and it is necessary to take into account the change in Vygotsky's methodological approach between proposing the concept of the ZPD at school and in play context.

A recent attempt to bring together different emphases of the ZPD is made by Chaiklin [3], which he calls «the common interpretation» of the ZPD.

For the ease of reference, the three aspects will be named *generality assumption* (i.e. applicable to learning all kind of subject matter), *assistance assumption* (learning is dependent on interventions by a more competent other), and *potential assumption* (property of the learner that permits the best and easiest learning) [3, p. 41].

A central indicator of the first aspect is the distance between actual and potential development, not the number of tasks solved alone or together. The second aspect emphasizes the quality of interaction between the child and a more competent person. Zuckerman [53] focuses on the same aspect and analyzes the quality and nonlinearity of adult help in the classroom. The third aspect has to do with the present and future changes in the learner.

Chaiklin [3] recognizes that there is a disparity between the three proposed aspects of the ZPD. Often researchers describe rather the zone of proximal learning than development. As a solution he proposes a division between subjective and objective zone of proximal development:

«A person's ability to imitate, as conceived as Vygotsky, is the basis for a subjective Zone of Proximal Development. (The objective zone exists through the social situation of development) [3, p. 51]».

The claim means that by revealing the child's readiness to imitate we can define the subjective ZPD. Referring to imitation as the source of the ZPD raise the problem of the role of creativity in development in general and its relation to imitation as well as the relation between objective and subjective factors of development.

Another fresh attempt to open a new perspective to the concept of the ZPD is made by Del Rio et al. [6]. They argue that an omitted point of view in the study has been «the ecological frontier between the internal and external, the mental and material, the organism and the medium» [6, p. 276]. As a matter of fact this emphasis points to Vygotsky's general genetic law of cultural development and resembles Valsiner's redefinition of the zone concept. We take up the same question later, but focus on play context of the ZPD.

The most referred context of the ZPD is school learning and problem solving. This context may have led to simplified interpretations of the concept and concealed the real potential of the concept. Changes in ordinary problem solving are a narrow developmental context and may tempt to simplify the unit of analysis of development. Another context, which from the very beginning introduces different challenges of learning and development, is play. Vygotsky described the ZPD in play as follows:

«Play creates a zone of proximal development of the child. In play the child always behaves beyond his average age, above his daily behavior; in play it is as though he were a head taller than himself. As in the focus of magnifying glass, play contains all developmental tendencies in a condensed form and in itself is a major source of development» [45, p. 101].

The problem with this definition is that most attributes of the more popular term from school context are lacking. This definition is full of metaphors. Did Vygotsky develop two separate concepts or did he intend to elaborate a more comprehensive framework, which could unite the idea of the ZPD in different contexts (e. g. play, learning and work)? Valsiner [42] supports the idea that Vygotsky aimed at one unified concept and Vygotsky explicitly writes about the wish to see the two contexts using the same conceptual frame, but at the same time developmental potential of play is more emphasized:

«The relationship of play to development should be compared with that of teaching — learning to development. Changes of needs and consciousness of a more general kind lie behind the play. Play is the resource of development and it creates the zone of proximal development. Action in the imaginary field, in the imagined situation, building of voluntary intention, the construction of life-plan, motives of willing — all this emerges in play» [45, p. 74–75].

We can see from the cited extract that Vygotsky did not propose the division of subjective and objective zones or individual activity from social guidance. Imitation is not the basis of his ZPD. We can suppose that the most serious challenge of developing the general concept of the ZPD is expressed in the last sentence of the excerpt. Put in other words how the ZPD is connected to the development of imagination, intentions, life-plans, motivation and will. Traditionally these aspects of development are not discussed in the analysis of learning. If we take literally Vygotsky's advice we have problems in juxtaposing the relation between learning and development on the one hand and play and development on the other.

Play — learning-development

When we compare the two contexts (play and school learning) of developing the concept of the ZPD it seems paradoxical that problem solving in the school context is used as the primary example. At that time Vygotsky described development still on the level of psychological functions. He writes:

«...the zone of proximal development defines those functions that have not yet matured but are in the process of maturation, functions that will mature tomorrow but are currently in an embryonic state. These functions could be termed the «buds» or «flowers» of development rather than the «fruits» of development. The actual developmental level characterizes mental development retrospectively, while the zone of proximal development characterizes mental development prospectively» [46, p. 86, originally 1935, p. 42].

Later he changed the focus from higher psychological functions to the relations between functions and psychological systems as the units of analysis of development.

Such concepts as personality and psychological age were used as developmental concepts instead of higher mental functions. Introduction of new units of analysis of development can be connected with the stage model of development, in which crisis periods indicate qualitative changes in the psychological life of an individual. Each crisis period indicated the change of the psychological mechanism of development. The mechanism of personality level development was connected with new forms of relations between psychological organization of a growing personality and social situation of development. An interesting problem is how differently development is represented in the two main contexts of the ZPD?

The problem-solving context in the classroom or virtual environment does not indicate further developmental effects than transition from aided individual problem solving to independent individual problem solving, which can be explained as the result of internalization of new psychological functions. Critical in this setting is the change of psychological functions. Problem solving is more or less a tool of changing psychological functions. This aspect was later elaborated in the El'konin–Davydov system of developmental education, in which subjective change and creative development of students was understood as the final goal of education, not better problem solving as such.

In play context we cannot use the same problem solving metaphor in the definition of the ZPD. Our first problem is how Vygotsky understood the term «play»? In general it is difficult to define what is play and what is not. Vygotsky did not write much about play. There are lecture notes of a student and a draft of the same lecture published by El'konin [12, original 1978]. In these documents play refers to «pretend role play» or «symbolic play», which sometimes is defined as «the play proper». If play «always creates the ZPD» does it mean that pretend role-play only creates the zone or does the other stages and forms of play have developmental potential as well? Another problem is in which time perspective and into which units we analyze play? In the western tradition one episode of children's imaginative role activity can be called «pretend role play» and in other approaches one play having the same plot structure may continue for several years [22 b].

In a long-term play it is possible to observe qualitative changes, which have different impact on development. In our case study e.g. the «rabbit» play changed its character radically during the years [25]. In the beginning the main emphasis was on the experimenting with different characters and acting out important events in the life like weddings or funerals. The three girls started their play with three toy rabbits and quite soon started to add new members to the family tree of rabbits, which at the end included over seventy members. Each new member had an individual character and specific (human) traits, which the girls observed in their social environment. Human characteristics were transferred to toy world and transformed to individual traits of toy rabbits. These traits were «play» tested in collisions and cooperation with the other (rabbit) relatives. The last stage of the «rabbit» play at the age of 10–12 years was quite specific. The play consisted mainly from writing «yellow paper» articles about scandals in the life of the «rabbit clan».

This example demonstrates the difference between the problems in classroom and play settings. The dis-

tance between independent individual problem solving and adult (or competent peer) guided problem solving, which is the main characteristics of the ZPD in the classroom, is not relevant. In play settings problems have another character. Vygotsky [45] pointed the special character of problems in play: how imaginative situations are invented and roles constructed. Adults do not have predefined «correct» solutions for these «problems» and it is not easy to help children finding any solutions. This is an example of the general challenge how to integrate creativity with the concept of the ZPD.

Another essential difference between problem solving and play is the type of rationality: problem solving is based on logical analytic rationality and play on narrative rationality. Most failures in defining the specific nature of play are based on attempts to apply formal logical rationality to the analysis of play. Narrative rationality is most often ascribed to storytelling and is determined by coherence and fidelity of stories. It is supposed that the world is a set of stories from which we choose and thus constantly recreate our lives [16]. This narrative rationality dominates in children's play. In play children are not repeating or describing rationally phenomena in the environment and play cannot be replaced with realistic actions, because it is reflecting reality in a deeper way (sense making, in relational terms, meaning). Vygotsky stated that play is a negative of every day life like art.

We suppose that it is necessary to define the zones of proximal development in play using the laws of narrative rationality. If we want to relate them to rational world we have to ask how play reflects reality? How children create the picture of reality in play? This picture is not a copy, but creative interpretation in which symbolic resources for the construction of sense and meaning are used. Children's creative interpretation has the same character as artistic creation has in adult world. Lindqvist [29] proposed that children use two basic models of artistic reflection of reality in play: 1) lyric and musical, dynamic model of reflecting reality. When children are using this model they play with movement, objects and language (like in music, poetry and dance) and 2) dramatic and literary model of reflecting reality, in which children create tension, contrasts, symbols, rituals, rhythm, light, voice etc.

The ZPD in problem solving in the classroom context is defined by stating the solutions and results in individual or adult guided problem situations. We may call the solutions «product creativity», which adult help supports. In play ready-made criteria of creativity are not available, because the emphasis is more on creative process and group activity. Adult logic and perspective emphasizing the results often prevents us to see the «products» of play. In the beginning of play process no one can tell what will be the «result». The situation is similar to any creative process in adult world.

Many play researchers have characterized play as a phenomenon, which has no external goals like realistic actions, but the process is the product. Basic features of the play process are process orientation, unpredictability, and inter-subjectivity. No single child can determine the flow of play alone. No child knows what happens next and at any point a wide range of new moves can be picked up. A participant cannot know how the others will interpret his turn and each turn gains its final meaning in others'

reactions. A large number of next actions are possible and each one can result in going in a radically different direction. Ambiguities between potential meanings are not solved until the subsequent turn happens. In this sense play is a primary example of nonlinear process.

These features of joint creation in imaginative play situations demonstrate that in play emphasis is on problem finding and experimenting rather than rational problem solving. We have to change the problem solving metaphor in order to construct an appropriate model of the ZPD in play, where learning cannot be understood in the problem-solving frame. We should ask how adults or more skillful peers could help in problem finding and dealing with narrative rationality of play situations? The psychological content of help is different in play. Sometimes the presence of an adult is an appropriate and sufficient support for the continuity of play. The task of the adults is to help in children's creativity and their approach to play should be creative as well. Play means creating together and symbolic interaction is central in-group creativity [35, 36]. Individual creative acts should be open ended, extendable, and multiple interpretable. But at the same time mutual understanding is important as well as coordination of individual contributions to joint activity.

In the problem-solving paradigm of the ZPD the emphasis is on learning of an individual child. Adult help takes place in a system of three elements: child — problem — adult. The system picture is different in play settings. Problems are embedded in a system of role relations in imaginative situations. In a system of role relations the zones of proximal development are shared and several people are stakeholders. The situation is collectively created, but individual interpretations and zones may be different. This is very clearly visible in our play-world projects of multi age groups. The younger children (4 to 5 years) understand the play setting differently compared to older children (7 to 8 years) [25]. We may even talk about different types of learning and play in the same setting and division of functions in play (director, stage manager, actor, viewer).

If learning is a general prerequisite for the ZPD as Vygotsky argues, we have to understand the difference between learning in the two contexts. We lack the characterization of learning in play in the original elaboration of the ZPD concept and understanding of learning in the classroom setting needs updating. Steen [37] offers an excellent example, which demonstrates the difference between learning in problem solving and narrative settings as play is. He describes how the classic story of «Little Red Riding Hood» is told for a group of persons. When they are asked about the individual images arisen from the telling they are widely different, but the sense of the story and its moral lesson are understood in the same way. Vygotsky [50] referred to the same phenomenon in his analysis of syncretism in children's understanding.

Differences in understanding and interpretations create a challenge how can we elaborate joint play events. The continuity of play demands agreement on events and turns, but they may be unexpected for participants. This tension of developing joint story line of play indicates how children mutually elaborate each other's zones of proximal development.

Play, creativity and development

Developmental potential of play is generally emphasized in early childhood education, but there are clear cultural differences in the play support among parents in different societies [18]. In spite of this, often there are no answers what and how play develops. Play is accepted and children are given opportunity to play, but active support or guidance is not organized. The emphasis on potential effects of play in long perspective can be explained on the basis of creative character of play process and absence of concrete results. The challenge is how to relate and integrate developmental potential of play with the zones of proximal development. In Vygotsky's cultural historical theory the concept of developmental potential is elaborated more than the ZPD.

Developmental potential of play is connected first of all to the development of imagination and symbolic competence. These characteristics are results of the whole play age and play experience during several years. We can even talk about close similarities between play and artistic creativity in adult life. Vygotsky (2004) argued that in play children create a symbolic reality like real artists do. He concluded that play is imagination in action and prototype of any artistic creativity. This connection is based on the syncretistic (holistic) character of play, which is also a necessary precondition for artistic creativity.

The same argument about the role of play in the development of human culture can be found in the play theory of Huizinga [27]. He was perhaps the most prominent scientist emphasizing the role of play in culture and he writes about «the nature and significance of play as a cultural phenomenon». Huizinga suggests that play is primary to and necessary (though not sufficient) condition of the generation of culture. So he is not just proposing that play reflects and mirrors cultural environment, but play is one of the motors of the development of culture.

Carruthers sums up the potential of pretend play in his philosophical analysis:

«By analogy, then, if we ask what human *pretend* play is for, the answer will be: its function is to practice for the sorts of imaginative thinking which will later manifest themselves in the creative activities of adults. The connection between the two forms of behavior, arguably, is that each involves essentially the same cognitive underpinnings — namely, a capacity to generate, and to reason with, novel suppositions or *imaginary scenarios*. And here the two most important factors — whose relevance is acknowledged by all parties — are some sort of capacity to generate new ideas, on the one hand (e. g. by noticing a novel analogy), together with abilities to see and to develop the significance of those ideas, on the other» [2, p. 3].

Developmental potential is result of several years' play practice and experience. We can imagine that it is a generalization of successive zones of proximal development. Our task is to explain how these zones are constructed and what kind of unit a zone can be? El'konin jr. [7] proposed the concept of «creative act» as the unit of analysis in his attempt to study developmental phenomena. He borrowed the term from Losev [30] and elaborated it to describe human development. A creative act has special potential and forms a turning point in developmental processes. A truly human act is an act of cultural co-creation, not a

form of consumption of culture and cultural products. Only productive action can be called a developmental act. *The product of a developmental act irreversibly changes the environment and the subject of the activity.*

Can we use creative developmental acts in the analysis of the zones of proximal development in play? Are irreversible changes of the subject possible in play? Many researchers focusing on short play periods in their research would answer negatively to this question. But the answer can be different if play is analyzed as leading activity of play age (from about three to seven years) and the content of play is focused on. In this developmental trajectory qualitative changes of cultural co-creation and use of cultural symbolic tools can be discerned.

The difficulty of following these changes is connected to the specific nature of play actions, in which sense making and emotional experience dominates. Irreversible changes happen in the domain of experiencing events and phenomena. After the formation of a new set of sense making with accompanying emotional experience and symbolic tools a return to the old way of understanding and experiencing is not probable. We may compare the situation with the explanation of the circulation of planets. After we are convinced that earth circulates the sun we hardly return to the old geocentric explanation.

Enriching the concept of the ZPD in play

It is amazing how little research is focused on the ZPD in play after Vygotsky's lecture on play in the beginning of 1930's. Vygotsky started a new research program on play in cooperation with Elkonin in 1931. He sketched in his lecture the challenges of play research: «I have to answer three questions: (1) to demonstrate that play is not just the predominant moment of child development, but the leading factor, (2) to show how play develops, i. e., the developmental significance of the transition from the predominance of the imaginary situation to the predominance of rules, and (3) to show the internal transformations originated by play in the child's development» [45]. In his letter to El'konin he writes about the joint goal of «creating a new theory of play».

El'konin elaborated his «Psychology of play» during four decades and it was published first time in 1978. He proposes several new concepts for the analysis of play, but does not elaborate further the concept of the ZPD. There are two main sources of enriching the concept of the ZPD in play: (1) theoretical and empirical research of play after Vygotsky, and (2) cultural-historical theory of human development. Vygotsky developed some central methodological principles and approaches for investigating human development after the introduction of the ZPD, but these principles are not implicitly referred to in the definition of the ZPD in play. Such developmental concepts are e.g. «the social situation of development», «general genetic law», «ideal and real form», «learning and new formations in development».

Our goal is to elaborate the concept of the ZPD for the whole play age i.e. between the crises of third and seventh year in Vygotsky's periodization of child development. The ZPD was introduced to play context focusing on the «developed form of play activity of children». But the

ZPD in earlier stages of play development was not discussed. Vygotsky's basic unit of play was composed from imaginative situations, role relations and rules. We suppose that it can be used as the tool for separating structural aspect of play from other activities, but the ZPD cannot be defined on this basis alone. An essential factor is the content of play relations as El'konin emphasized. According to him «Role-playing is an activity within which the child becomes oriented towards the most universal, the most fundamental meanings of human activity» [22, p. 24]. In his diaries El'konin [9] writes that play is not a process of mastering the forms of human activity or social roles, which was stressed during the Soviet period in particular, but rather the *contents of moral norms*.

We suppose, following the argument of El'konin [11], that sense making is the key in understanding of play and the zones of proximal development in play. We have to answer the question «what develops» in terms of moral content of human relations. This content is present in imaginative reality as emotional «perezhivanie» and not yet as daily actions. It is also impossible to think that the content and structure of play develop separated from each other.

The concepts of «the social situation of development» and «general genetic law of development» can help further elaborate the concept of the ZPD in play. Veresov [44] has paid attention to a minor but principal difference in the interpretations of «the general genetic law of development». In the translations it is often mentioned that new psychological functions appear in social relations. But the original text equates psychological functions and social relations. Vygotsky writes:

«...every higher mental function, before becoming internal mental function, previously was a social relation between two people. All mental functions are internalized social relations» [57, p. 145–146].

Our challenge is to find out which social relations become internalized individual mental functions and how the general law works in different stages of play development? An additional challenge is to move from separate psychological functions to systems of functions and personality.

In answering these questions dramatic collisions and drama of development, which Vygotsky adopted from Politzer [33] is relevant. Dramatic events and social drama between individuals, emotionally experienced collisions and contradictions are characteristics of those social relations, which influence mental functions of an individual. In his sketch of the lecture on play Vygotsky characterizes the basic contradiction of play: Play actions are not based on the perception of reality, but on sense making of social reality. Play actions, although are carried out using real objects in imaginative situations. Cultural meaning and perception of objects are subsumed to play use (and sense making) resulting in pretending that these objects have characteristics, which they do not have in adult world [12]. In this sense every pretend play action is a creative act in transforming ordinary cultural meanings.

We suppose that understanding of this basic contradiction and its consequences like symbolism and emotional relations are a necessary point of departure in attempts to elaborate the ZPD in play. The critical point of Sutton-Smith [40] is that many researchers do not understand that the logic of play is the logic of

dealing with emotions and children are fabricating another world in play. By connecting play and games directly with mastering real life, an essential aspect of playfulness and development will be missed.

Play offers an opportunity for role inversions instead of replication and direct imitation of cultural experience. Many every day relationships are asymmetrical, but in play these relationships are symmetrical. This aspect of pretend role-play was not understood in Soviet time when «correct» hierarchical power relations were modeled in order to enhance children's social play. Equal turn taking in play does not exist in real life situations. In traditional plays, reversible roles are usual, which is not the case in real life. But access to the roles is inverted rather than success or failure. All games provide space within a role for tactical variations and innovations. In game design, a key factor is how to find new ways to be more strategic and how things might be done differently. In his sketch of a new anthropology of play, Sutton-Smith [39] elevates the innovative functions of playing to the position of the most challenging task of play research and development. He asks, how the novelties introduced to plays and games transfer back to the society at large.

In order to develop the innovative functions of playing, it is necessary to know how it develops the player and how play can be promoted. An essential line of demarcation is: who is developing the play? Children's own initiative and development of play is different from adult guided or designed play [53]. In day care and other children's places, adults plan space for play, prepare props, control the process and evaluate the success. In game design, the situation is the same. A critical feature of any game is how much space is left for the children's own initiative, improvisation, co-operation and creativity.

One of the basic characteristics of children's sense making in self-initiated play is scriptlessness. Children do not make explicit plans for their creative play. The scripts are not detailed plans, but just general ideas about emotionally attractive phenomena in life. Play is scripted and carried out in concrete forms realizing the idea simultaneously as an improvised activity. Young children develop the script based on their experiences, impressions and observed situations. Later, events and knowledge are infused to the script, but the idea still depends on play actions (e.g. «I play hospital»). Children are directors, dramatizers, actors, and viewers at the same time. This feature of developed role-play is a big challenge for the adults trying to participate in children's play and promote the creation of the ZPD.

A typical trait of any pretend play is constant transitions between fictional role positions and real social positions in children's play groups. Children often mix several plots into flow of play during the same play session, step out from fictional role positions for negotiating misunderstandings, and step back to their pretend play roles. We have observed four parallel, intertwined play plots in a Finnish day care center during one «free» play session. In another observed session of «shopping play» during 45 minutes there was over twenty negotiations or side themes and returns back to the «shopping play». These transitions from role relations to negotiations and back we called «typical actions of play activity» [19, 20].

The difficulty of understanding children's play is partly connected with the problem of finding appropriate ref-

erence in adult life. Play is not a direct copy of real life events. Children try to make sense by creating an «as if» world to replay or live through the events in their life. But this is an opportunity for imagination and creativity, which change the direct replay to «stories never told before». Children's experiences or rich factual knowledge cannot alone lead to creative play, because sense making is the essence of play. New events and turns in an «as if» format are necessary elements of the new story in play form. Adult help by just informing children how to enrich the play plot does not work, because emotional involvement is the core element in the sense making.

When focusing on self-development in play we can talk about transitions between «pretend self» and «real self» of the child. It may be more appropriate to use the concept of «pretend self» instead of «role» or «role play» [26]. The use of pretend self is different from acting in the theatrical sense. Children become engaged in the fictional events and are trying out ideas, motivation and reactions to events in make-believe situations. The essence of pretending is not performing in the artistic sense, but functioning in a more mature manner within the fictional situation.

Emotional involvement of children is described as dual effect between pretend and real self in socio-dramatic as well as in thematic-fantasy play [26]. In this approach, the socio-dramatic play is pre-scripted from every day events and conversations, and thematic-fantasy play is unscripted, although often based on stories, videos or television programs. Both forms are possible as solitary play or as play with child partners or adults.

Adult help in play ZPD

Help in a child's own problem solving is essential in the definition of the ZPD in classroom context. Adult play help has a different function in different stages of developmental trajectory of play age and the methods of constructing the ZPDs are different. We can divide the play age roughly into three qualitatively different periods depending on the initiative in interaction. At the beginning of play age (2–3 years) *adult initiative* is very important. The continuity of role actions and understanding of the conventionality of play has to be supported by the adults. After this *children's own initiative* is crucial. Adult presence may be a necessary condition for play, but their initiative may break the play process. After five years there is a need for *adult help in enriching the moral challenge and symbolism* of play.

Empirical research on the beginning of pretend role-play demonstrates how important adult help is. We compared the same play in different age groups: shopping play of 2–3 years olds and 4–6 years olds in day care centers. The play of older group was carried out without adult participation. All the necessary props and items of shopping play (scales, cash register, empty packages etc.) were in the cupboard and children did not need adult help. In the group of younger children play did not proceed without adult support. Adults offered children role-related concrete props (salespersons' head-dress, sale items, scale etc.). They instructed what actions are carried out in the adopted role and what can be done next [24].

Often adult help has a rational character, which can be seen in the questions like «what are you doing», «what is taking place in this play», «what happens next»? Adults seem to think that children have to be instructed how to copy play actions from real life and carry out them truthfully. Adults keep their adult (power) position in relation to children. Dramatic collisions or tension of tales and stories are not often used as educational tool in the beginning of pretend role-play. We may say that play technique is instructed rather than sense making through adult imaginative role action.

An example about adult imaginative role action was observed in a drama project based on Finnish folk tales. In one of the tales presented to children the culmination point is an episode where the wolf is transformed to prince. The tale was told to children using hand puppets. The turning point was presented so that the wolf puppet is lifted up and the prince appears under the cloak. A girl (2:10) takes the puppets after the drama presentation hands them to the teacher and demands that the appearance of the prince should be demonstrated to her accompanied with the song. The girl repeated her demand five times grasping the skirt of the teacher before it was necessary to leave for lunch.

The transition of play initiative from adults to children was observed in the playgroup at our campus. In the group short stories were dramatized each time. After the dramatization children were waiting what kind of play activity students would propose, but a gradual change took place at this point. Children did not wait for proposal, but announced to students what play they would like to start. An example is the initiative in «The Ship Play».

A key person starting this play was a girl named Irina (4:6) who visited the group with her older sister. She was very shy and did not participate in any play without the sister. Most time she was a bystander and observer of other children's play activity. But when her sister started school she started to participate in play and gradually take initiative. In the «Ship play» she proposed the theme and described what roles are necessary, what garments are needed, how to build the ship. Her proposals were accepted and more children joined the play. The students decided to take roles Irina proposed. Each new event was planned on the spot spontaneously depending on the situation and children's behavior. Some children were very smart players and demanded that the events should be planned and performed «truthfully», some younger children were proposing new ideas all the time without taking other's ideas into account. This created one more challenge for the students: they had to find the ways to put all these ideas together without suppressing children's initiatives. Introducing a new character (student in role) often was the most effectively solution in such situations.

Irina was active and firm in defining the theme of play and necessary roles and props. But she was not very skillful in inventing exciting play events. Other children proposed what new events are suitable for their play. We may talk about children's shared initiatives. Student's initiatives remained important by enacting challenging turns of events and introducing new roles. Such a challenging turn was a surprise attack of pirates against the ship as well as the appearance of an exotic merchant Abdullah selling precious jewels, crowns and gold. The students created dramatic events e. g. by

hiding the crowns or other props when children did not see what happened.

The need for help may not be so obvious when children master elementary play skills. Children may be involved in play and they demonstrate initiatives in playing. But play may have simple plot and children play alone or in pairs. In day care centers joint play of all children in a group is often exception. In these groups of preschool age children there is a specific challenge how to enrich play content and enhance participation in joint play activity.

The development of joint exciting pretend play with others is not an easy task for a child. A turning point is about five years. Before that children's play is mostly based on concrete material props, roles, role talk, and observable symbolic play action. But after five play activity is developed through the construction of exciting play events; roles become secondary, subordinate to the plot. Child starts developing complex plots based not only on everyday life experiences but also on favorite fairytales, stories, TV programs, and etc.

Plays may take place on verbal level or as inner activity from which details cannot be seen. It is possible to see that a child is intensively involved in imaginative playing, but expressions are minimal: very generalized schema of plays, imaginary objects and mainly verbalizations about actions and objects of play. The child primarily acts as a scriptwriter creating imaginative events. This type of play is called «director's play» in cultural-historical tradition, but it is not widely used in Western play research.

Children's all experiences do not ignite the play. A decisive factor is emotional charge of the experience. A general mechanism is a desire to do more than is possible at a certain age. This kind of need can be realized in an imaginative situation, but not in real life. Interesting actions and deeds can be transformed into play motives. Children do not repeat the things experienced and seen directly, but they start to transform and experiment creatively.

Zaporozhets (1986) gives a hint for guidance in his analysis of psychological differences between play and folk tales: «Psychological characteristics of tales and play are quite similar. If the child acts in imaginative situation in play, listening a tales requires imagining the situation and actions as well.» This similarity has been used in many enrichment programs and methods aiming at plot development with children. Tales and stories build a bridge to more advanced play scripts and plots in «joint invention play» [13], in the use of folk tale structure as the criterion of play plot [14], in dialogical drama [1], and in «play worlds» [28]. A joint feature in all the approaches is to reveal the importance of exchange and mutuality between the roles in script development.

The first two methods use the classical analysis of plot structure of folk tales [34] as the point of departure. The classical scheme of 31 steps is condensed, but the order of turns remains the same. The condensed scheme is used as a tool of sense making in joint inventive play. The scheme is used for proposing and commenting turns in the play.

Elkoninova et al. [13, 14] suggests that the tale is the prototype of pretend role-play and gives birth to children's motivation and developmental changes. The scheme is accordingly used as the criterion of the development of play rather than as a tool of plot crafting. A central question is if children have understood the sense of the tale

events and how it is used in the play scripts. A critical feature is «the two-stroke structure of play plot». The first stroke means the way, in which children created a challenging situation in a play plot and how they loaded pressure to take measures in order to solve the situation. Created imaginative circumstances present a question to the hero «how are you going to react in this situation?» The second stroke is the answer to the challenge.

El'konin [7] emphasized that sense making and motive only exists concretely when they are experienced and supported by emotions. During play, the child transforms his inner world to the plot and events of play. He constructs the play situations, which he earlier has emotionally lived through. He constructs situations based on earlier conflicts and collisions and tests if the emotion can lead to actions having the emotional tone of a solution. The child may test his solution on emotional level by repeating the same play again and again.

A common worry in all methods of play guidance based on tales and stories is the content of play. The point of departure is the difference between the theme and content of play, El'konin [8, 10] emphasized. The western play research does not make the same difference and in most cases the theme of the play is the same as the content. E. g. the content is described «home play», «doctor play» or «shopping play». Behind each theme, there is human activity and social relations between characters in El'konin's [8] approach. These relations may reflect cooperation, help, taking care, use of power, rudeness etc. These features and values are the (moral) content of play.

Bredikyte [1] and Lindqvist [28] focus on the importance of basic values of human life, which children can understand through opposites. Such opposites are visible – invisible, fear – safety, freedom – necessity, power – subordination, good – bad, and courage – cowardice etc. Both authors emphasize the role of aesthetics and creativity in play. This is why the repetition of the script of a story in play is not the whole solution in play guidance. Play is first of all an attempt of sense making and experimentation in human values. Play and play actions cannot be changed with real actions and environments because play reflects reality on deeper level by focusing on sense making in a child-appropriate, comprehensive way [22 a]. Sense making and experimentation take place using typical symbolic tools of each culture. The effective methods of play guidance thus have symbolic nature. This is the reason why the aesthetics of play offers new tools for play guidance.

The ZPD in play as experimentation with human values and motives

In our thinking the concept of the ZPD is an empty concept without elaboration of psychological mechanism bringing changes in development. Drama and dramatic events in the social situation of development are essential tools, but they should launch the process of self-change. We can suppose that such process does not take place only on the basis of the child's decision to become another person. Our hypothesis is that the child

needs a long process of experimenting with different characteristics, positions and social relations revealing the tension between sense making and cultural meaning.

Podd'iakov [32] identified a special kind of experimentation in children – social experimentation. He discerned four different types of it: 1) exploratory changing of social situation aiming at removing or aggravating a conflict, 2) experimenting with personality characteristics of another person, 3) exploration of one's own powers (intellectual, volitional, personal), 4) exploratory forecasting of various social situations. The context of Podd'iakov's analysis was children's every day life and goal to find out how children attain deeper knowledge. From the point of view of child development an *essential context of experimentation is play* and construction of imaginative situations, which is not focused on in his analysis.

Actually we are proposing that the full integrative definition of the ZPD should include one more step: from joint action (problem solving) to child-initiated social experimentation and developmental qualitative, system level change. This step is lacking in the ZPD of problem solving in school context, because correct solution of the problem seems to be enough. In joint problem solving a new higher mental function is still shared social relation and not yet internalized function. The internalization phase is not included in the basic definition of the ZPD as the distance between individual and joint problem solving. Another problem is that individual change is focused on instead of broader cultural units. In play context the necessity of joint experimentation is obvious and an extended concept of the ZPD is needed.

The necessity of the second step is clearly visible in the experiment of Strelkova [38], in which six years olds demonstrated helping behavior when role relations supported it, but helping disappeared after eliminating role relations. In this case play creates the ZPD as a potential, but not as a new formation of personality structure. We propose that the full definition of the ZPD taking into account Vygotsky's general methodological approach to human development includes two steps: (1) from joint dramatic collisions (problems) to potential developmental changes, and (2) from joint supported action to individual or collective experimentation and personality change. The result of the first step can be a new potential. The second step result in qualitative change of personality structure.

The second step is lacking in the play world method Lindqvist (1995) developed. Developmental effects of children's and adults' joint drama and play are not studied systematically in children's experimentation in child-initiated play after play world experience. We know from parents' reports that our play world “Alien R2” launched children's own after-school yard play based on enacted themes, which lasted for half a year. But this independent experimentation was not documented, because we focused on play world development.

Later we have collected some qualitative data describing this stage. The teacher of the educational team wrote in her field notes about the child-initiated play after the introduction of the main characters in the «Rumpelstiltskin»* playworld.

* The playworld was based on classic folktale of brothers Grimm «Rumpelstiltskin». The main characters of this folktale (teachers in role) visited the classroom each one telling the tale from one's own point of view.

She reported that all school children of experimental classroom (vertically integrated group of 4–8 years) participated the play «The Court of Surmundia» every moment when only possible in the play corner. The theme of play was almost always the same: the princess Alexandra has escaped and Rumpelstiltskin was chasing her. Parents of the royal family were worried and sent riding valets and guards looking for the girl. Role characters were different from time to time, but the basic story line remained the same. All the school age children (14 children, half of the class) participated, girls as well as boys. Roles were negotiated, even quarreled, but the whole group was involved in the play and nobody was left out any time.

In the study of this experimenting in play context Vygotsky's general approach to experimental-genetic method is helpful. He wrote:

The method we use can be named an experimental-genetic method in the sense that it artificially causes and creates genetic process of mental development... The task of the experiment consists in fusing each stiffened and hardened psychological form, to transform it into a moving, current stream of the separate moments replacing each other... The task of such an analysis is to present experimentally of the higher form of behavior not as a thing, but as a process, to take it in movement, going not from the whole to the parts, but from the process to its separate moments» [47, p. 641].

In order to study the ZPD and creativity in play, we must experimentally construct environments by promoting new creative forms of play. We have attempted to balance children's free choice between different available activities by offering new challenging play opportunities. In most cases, play is promoted by the use of indirect guidance methods.

Methodologically speaking, our empirical work does not meet the criteria of traditional experimental research. We do not have clear independent and dependent variables, but a variety of activity settings (e.g. joint play of adults and children in play worlds and creative activity corners) and different types of interaction within them. The impact of settings cannot be controlled in the traditional way. But we still think that this kind of environment is appropriate for the empirical study of play and creativity. The traditional model of experiment does not offer opportunity for social experimenting and initiatives for children. The main difference from the traditional idea of experiment is that here children can choose between many different «independent variables».

Discussion

The comparison of two main definitions of the ZPD demonstrated that they emphasize different aspects and levels of human development. The definition in school

context focuses on the development of psychological functions and in play context on system level connections between functions and personality. On the basis of published texts we can conclude that Vygotsky aimed at unified concept of the ZPD. In both contexts the relations between learning and development was emphasized as the main developmental factor.

In order to elaborate the proposed unified concept of the ZPD it is necessary to specify and update our understanding of learning as the key to developmental changes [21]. Vygotsky's approach to learning as joint, collaborative activity is seminal, but problem solving context in school setting is trivial in comparison to his theoretical frame. In western interpretations problem solving is an individual enterprise and the teacher is just a helper, not a learning partner. Adult help is not a mutual process in these interpretations as Zuckerman [53] proposes.

Learning in play is an uncharted territory in psychology and educational theory. One of the most famous representatives of play theory, Brian Sutton-Smith [40] argues that (western) play research has not been able to reveal the essence of play. The same can be said about learning in play, which is most often evaluated using formal cognitive criteria of school learning. Central aspects of development in Vygotsky's definition are not present in this evaluation. Learning is not connected to “action in the imaginary field, in the imagined situation, building of voluntary intention, the construction of life-plan, motives of willing”, which were listed as central features of the ZPD in play. Learning in play is first of all connected to the development of learning motivation on general level [5, 12, 22].

We propose an expanded definition of the ZPD combining the two original definitions. This definition proposes two distances: 1) between individual action and joint higher level potential, and 2) between joint higher-level potential and qualitative change in personality. Learning is not limited in this definition to individual or joint problem solving. A decisive step is learning, which leads from potentials to personality change. If we are satisfied with correct problem solving we can talk about changes in problem solving, not about development. Applied to play development we propose three qualitatively different types of zones of proximal development for the whole play age from three to seven years. As far we understand Vygotsky was talking about the last type of ZPD in his lectures on play. An important aspect in our typology is the social situation of development and qualitative changes in adult help. Different types of adult help focus on different aspects of learning in play context.

Our proposals aiming at integration of two original definitions of the ZPD have a preliminary character. We understand that much research work has to be done for revealing the whole picture of learning in play and its role in human development.

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