

УДК 371.255

## Problems of Learning Motivation. The age Aspect

**Katerina N. Polivanova\***

*Institute of Education Development of the National Research University  
«Higher School of Economics»  
Room 411, 4/2 Slavanskaia ploshad, Moscow, 101090 Russia <sup>1</sup>*

Received 04.11.2011, received in revised form 11.11.2011, accepted 23.11.2012

---

*The paper discusses the problems of learning motivation of schoolchildren. It is shown that the basis of motivation is the logic of the age development. Based on the periodization of the mental development of D.B. Elkonin two types of age were identified and the features of motivation were demonstrated. It is shown that at the younger and older school age the learning motivation is related to the distinction between a natural and artificial action. We describe the specifics of the formation of the artificial action (assignment of the action sample).*

*The motivation of teenagers (in middle school) is related to the awareness of themselves as subjects of the action.*

*Keywords: need, motivation, development objectives, periodization of mental development, younger school age, adolescence.*

---

The problem of learning motivation is one of the most important in the education design. In connection with the motivation or, simply stated, with the interest we see a paradoxical situation: people talk about the motivation continuously, but school and school education is increasingly fraught with compulsion. Or let's say more cautiously: it is assumed that the child has (should have) an interest in what he is taught. Where this interest come from, how it is kept – no one talks about it as though it goes without saying. However, it is clear that the learning content is selected and filtered by adults, it is often becomes the subject of heated debates but these disputes are adults'. But why the child, for example, has to know the Ohm's law for the

circuit section – for some reason we avoid this question shyly.

Is the child – a student, “a trainee” – a player on the field of educational interests? If yes, what is this interest, what is its origin, whether it is necessary to consider it, how to satisfy this interest.

Basically, as applied to education, there are two sources of interest. The first one – external – captures what a person should be to be considered capable of functioning by the society (what knowledge and skills he should have). According to this position what should be transferred to the child in the form of knowledge, skills, competencies, etc is determined. And the second one – internal (subjective) – what the

---

\* Corresponding author E-mail address: kpolivanova@mail.ru

<sup>1</sup> © Siberian Federal University. All rights reserved

subject itself wants, what it wants to learn. The nature of the interest problem in education is centered around the “meeting place” of these two positions – external and internal.

Today, the content of education is entirely set by the first position – external one. It is society represented by specialists in the field of education that decides what we should know and be able to do. However, in this publication we try to prove the following proposition: while ignoring the interests of the growing child the elimination of education occurs, and then the interests of all the other players (government, education system, business) – a fiction.

We proceed from two assumptions:

- a child has his own interests that are connected to the logic of his development;
- educational environment **can and should** be built on these basal needs of the growing child.

If continue to ignore your own internal needs (motives), all the efforts, investments and political actions are in vain. Virtually, the situation is as follows: adults (society) invest substantial resources in education proceeding from their own ideas about what a child needs to learn and hoping that he will provide for their old age, but having done it badly they find the futility of their investments. The same is at the state level: investments in the education system suggesting return in the future turn out to be wasted. If we continue to build education based on a request from the external to the basic needs of the learner, we will always “miss” – our actions will get lost, sink, disappear.

In addition to the above we can point on a generic feature of the education system. Traditionally, it is based on the engineering type: the functioning of the system under the assumption that the process of learning is subject to the scheme  $I \rightarrow R$  (incentive –

reaction), i.e. it is assumed that a given incentive (learning content) is followed by a programmed response (learning quality). This scheme is applicable to the complex, but “dead” object; the **only** response that can be pre-planned and designed by setting the incentive is assumed. Traditionally, the education system does not accept the presence of its own (unknown) characteristics of the object exposure. Hence, in fact, all the resulting characteristics of the education system that was once called “objective” occur.

The most striking example of inadequacy of this paradigm is a teenage school built without regard to the intentions of students that today performs (in mass practice) a single function – controllable socialization.

It is clear that education can be effective, i.e. one can count on the “income” only if it meets the “natural” needs of the child. The word “natural” is in quotes because a person does not have the actual natural needs.

What interests of the child, and there are many of them, should be considered? Our thesis is that the space of analysis of the child needs, and it is them that set the foundation for the formation of his “interests”, is the space of the age development. And although it does not exhaust all the sources of interest in mass education it remains prevalent.

To formulate the requirements for the education system resulting from the analysis of the logic of the age development we should refer to the theoretical explanations of the mechanisms of the origin and development of motivation.

According to the theory of activity, motivation occurs with the “objectification of needs” (A.N. Leontiev, 1971): the original needs (biological needs) in the process of human development “find” in the world around objects of satisfaction, and these subjects become motives of activity.

In this logic two historical processes are singled out – phylogenetic and ontogenetic.

In the history of mankind the development of means of meeting needs – objects, i.e. motives was going on. A person has original – basic, vital, basal – needs – for food, warmth, etc. Gradually the sphere of objects that meet those needs expanded, there were new items that mediated satisfaction of the needs (the field of production emerged and developed: Neolithic Revolution, scientific and technical progress). There came new needs and new motives (objects that satisfy the need). “Ideal” needs and motivations appeared.

Thus, the objectification of needs, i.e. “meeting” with the object that can satisfy the need leads to two interrelated processes – expansion of objectivity and development of needs.

A.N. Leontiev also described the mechanism of motives development. In the development process of activity its component actions are isolated, “grow” and become independent activities. The purpose of the action becomes the motif of a new activity. This mechanism is called a “shift of the motive to the target”.

Another historical process of the development of motivational sphere is ontogenetic. A child is born in the world of deeply differentiated needs and motives. This world of needs and motives is gradually opening to the child. The more complex the organization of the world is, the more difficult the process of growing up is. So the historical development of society leads to the emergence of new ages. They are inextricably wedged in the old ones (today) forming a complex sequence of diverse ages. The current state of childhood is a difficult fixation in the socio-cultural forms of the origin history of childhood (D.B. Elkonin, 1971). A complex sequence of ages is essentially a sequence of major activities and, accordingly, of main motives. These “age” motives in general are universal and do not depend on the circumstances of growing up.

Motives of the age development, unfortunately, have not been studied or barely explored. However, the very activity scheme highlighting the sequence of the change of leading activities outlines the logic of the change of motives. Establishing the leading activity leads to the formation of the motive of this activity, therefore, the “leading” motive occurs. In this logic, it should be noted that the motive appears as a new formation of the leading activity, i.e. at the end of the formation period of the leading activity, at the end of the period of the age establishment. Motivational mechanism proposed by A.N. Leontiev is substantially criticized. Let us present arguments of B.D. Elkonin (2001). He draws attention to the fact that, initially, the subject was never given in the human activity, *before* activity. Therefore, the main problem is the search and testing of the subject, its recreation by means of the activity, its formation as a subject. This is an important point that allows a much more adequate presentation of the situation in the formation of the motive. In fact B.D. Elkonin says about the mutual representation in one activity and needs and its subject, about their mutual testing when the need tests the subject and the subject tests the need.

Both A.N. Leontiev and B.D. Elkonin discuss the mechanism of a relationship between the need and its *given* (according to A.N. Leontiev) or *stated*, i.e. only potentially possible (according to B.D. Elkonin). Nevertheless, the most painful question, which is where the need really comes from, remains unanswered. What is the need that finds directly (or finds it in the process of permanent testing and thus creates it) its own subject.

The basis for understanding of the age-related development in the Russian psychological tradition is the periodization of psychological development in childhood proposed by

D.B. Elkonin (1971). This periodization is based on the hypothesis saying that each of the children ages that were socially and culturally formed has its own meaning and purpose in the overall logic of ontogeny. According to this periodization, childhood (0 to 18 years) is divided into three periods: early childhood, childhood and adolescence. Each epoch consists of two different types of periods: the epoch begins with a period in the “child is a social adult” system and ends with a period in the “child is a social subject” system. During the first period, a motivational aspect of activity is primarily developed, and during the second period – the operational and technical aspect.

In this context we are interested in the epochs and the periods covered by the system of public education: childhood (3 to 11 years) and adolescence (11 to 18 years). As we said, each epoch consists of two periods. First comes the period of the pre-emptive development of the sphere of relationships and experiences; it is a period from 3 to 7 years (preschool age) and from 11 to 15 years (younger teenagers). The second period in each of the epochs is the period of pre-emptive development of methods of actions; and this is primary school age (from 6-7 to 11 years) and older teens (15 to 18 years).

Thus, the ages of two types were defined – the first one when the need-motivational sphere predominantly develops, and the second one when the operational-technical sphere predominantly develops. It is belonging of the period to the first or the second type that sets the quality of motivation and its contents. During periods of the first type a child is most motivated in activities that allow him to discover the sphere of relationships with others, get to know himself, experience and learn the scope of his feelings and states. The periods of the second type are characterized by a focus on the acquisition of new ways of activity – abilities, knowledge and skills.

Now we can speak about how well the public education system is responding to the “challenges” of the age development. It is clear that society has succeeded well in the organization of education for children living in the periods of the second type (primary school and older teens), but the education of children living in the periods of the first type suffers a permanent failure.

In this article we want to specifically identify the causes of this situation by defining the objective of development in certain periods.

At first we consider the “successes” of the education system – ages of the second type: primary school and senior school (adolescence). Here are the illustrations based on the material of the primary school age as much better described in psychology.

We can present many illustrations, evidence that schooling accurately corresponds to an internal request of the child, his motivation. What is the request, what is the subject of the need (motive)? It is known that children of primary school age (especially at the beginning of studying) play games with rules with passion (“hopscotch”, rhymes, “rubber band” game, bouncer, etc.). What is it? This is a recreation of a situation of artificial (unnatural) action. What are these games? The artificial, unnatural action is appreciated in them. The same thing happens in education: children acquire the skills of acting by artificial means.

Artificial action is an action that is based on specific laws in school, as a rule, it is presented to a child as an example. How we can recreate, reproduce the example. At first glance, it simply must be repeated. However, it is not as obvious as it seems at first glance.

For example, a first-grader learns to write letters by means of samples. The child should copy the samples. How does it work? The sample cannot be copied i.e. “photographed”. To reproduce a sample means to build your action so that the

image appears on the paper as close to the sample as possible. Thus, it is not the letter or the sample itself that is copied, reproduced, but the *action according to its structure*. But the sample of this action is not given (a sample of the result is given). A sample of the *action* is built by the child himself by trying different ways of writing. About forty years ago, when children learnt to write with ink pens, when teaching to write the action itself was drawn attention to – a teacher dictated: “press – a hair”. The teacher did not just show what the perfect letter looks like, but also paid attention to how it occurs: the pressure increases on the parts of the picture elements and on other parts it is weakened (the line was like “as a hair”). This facilitated the construction of the action, which, when executed, led to the creation of the desired image. If you change teaching techniques (in particular, with the advent of ballpoint pens), this part of the training disappeared. Requirements for handwriting decreased, letters written by the child ceased to be so perfect. But not only has the perfection of written letters (calligraphy) gone, but also a sample of the action has disappeared, leaving only a sample of result.

Another example is from learning music. They show to a child how to “play a note”. They pay attention to the sound of it, show how a finger should push the button. But again, neither the sound of music, nor the trajectory of the finger provides adequate performance. There is a need to recreate (with your own hand, not with the hand of the teacher) the whole score of the micromotion of the shoulder, forearm, hand and finger. No matter how skilled the teacher is, this score is recreated by the hand, the body of the child. Apparently, a more talented child grasps this inner picture of the motion and reproduces it easier, but a less talented child needs something more. For example, the teacher asks the child to put his hand under his elbow to feel the “heaviness” that occurs in the elbow when he hit a key. This is

an attempt to give the child a feel for what kind of feeling should arise in him when he plays a note as required. And then the child should feel the difference between a note taken with the “light” and “heavy” elbow. Feeling the difference is the time of partition of the natural action into his “own” natural and his own “other” artificial. Or: your past (real) and your present (ideal).

Let us stress: the artificial action is constructed from the natural. The most important is the distinction between your own (natural) and another (artificial). These examples draw us to the process of assigning a sample. The sample of the *action* is not given initially, no matter how many examples of the proper execution are cited. The result of the action is given in the example. But it is not and cannot be a sample. The sample can occur when a child feels, perceives the difference between his original (natural, spontaneous), and his own but different – exemplary – way of action. You can help this feeling arise helping to build your own exemplary action by supporting the child’s hand giving verbal instructions, stopping the wrong moves. Hence, the term “formation” that is shaping the initially formless (natural, spontaneous, organismic). But it is impossible to impose, “put” this sample on the child.

So, in this example of the formation of the subject-instrumental action the artificial action is formed from the natural that becomes the *material* for another artificial. At a time when the child discovers (not reflexively, but by the fact of changing his actions) his (yet operationally natural) action for the first time, it ceases to be natural, is broken up into his own and not his own, and the discrepancy between the two poles becomes a matter of need.

It is important to stress that the motive is not actually an artificial action, not the sample as such, not the mode of action as such, but the “gap” between his own and the other, real and ideal.

The time of their differentiation – the emergence of this “gap” is the moment of learning. Next the artificial is automated. This is the stage of training, development, exercise – the transformation of the newly established artificial action into a skill.

Education in elementary school, thus, should be designed as retention (gain, recreation) of the distinction between the natural and the artificial.

In the traditional school the artificial (cultural and social mode of action) is given ready-made; in developing education systems it is built by the children themselves in response to the problem that cannot be solved by a “natural way”. But the essence is the same: the retention of distinction as such. This retention sets motivation for educational activity. Thus, the primary school age that is operationally technical in its main purpose, “accurately” matches the formation of the ways of action that children acquires in school.

Let us emphasize that to a child it is not important what system he is studying in – a traditional or developing one. It is important for those subjects of the education system that invest own resources in it. Then we can already put the question of what artificial must be presented as the standard of education, the child does not care. Further efforts are successful, if the training falls into this gap: natural – artificial.

Now let us consider the periods of the first type. These, as we already mentioned, are the pre-school age and adolescence. We know that they are the most difficult for the “direct formation”. It is most clearly seen in adolescence, but when trying to organize the training of preschool children the same problems occur. It is known that the leading activity of preschool age is a game. It develops the motivational sphere in a child, the scope of his personality. According to our records, regardless of the program having effect in a preschool institution (“Origins”, “Development”, “From

childhood to adolescence”, Sample Program), the main focus in a preparatory group is on training for the school. If we compare this with data of E.O. Smirnova on reducing the level of formation arbitrariness till the end of the pre-school age, it will become clear that the introduction of direct learning (working very well, as we just saw in the primary school age) leads to the actual destruction of the age, it stops solving its own problem of the age.

What is the mechanism of motivation, what is its subject at a preschool age or adolescence? Let us consider the most troubled school age – adolescence. It is described by different authors in different ways, its leading activity is also determined in different ways – intimate-personal communication, social-useful activity, project activity. But nearly all agree in recognizing that the core of the age is the formation of identity which is the establishment of your own holistic Self. Formally, the term “identity” was introduced to the academic community by E. Ericson (1996). His theory is called social psychoanalysis. But now another fact is more important – regardless of the scientific paradigm most researchers agree in recognizing the structure-determining role of the process self-determination to understand the content of adolescence.

Thus, the theoretical development of Freud’s ideas leads to determining adolescence as a period of release from the power of the parents: “separation mourning”; according to A. Freyd, the resumption of the conflict between It and Super-Self provoked by increasing the physiological changes can potentially be resolved by building their own behavior criteria, i.e. through individualization. E. Ericson believed adolescence was a “normative crisis of identity”, i.e. the period of the most intensive search for their own integrity and identity. Partial, fragmentation self-identification (I am a schoolchild, I am a son) is subject to a review and

critique, a new integral Self is constructed. In the development of thinking (intelligent structures), according to Piaget, in adolescence there is a stage of formal operations like maneuvering between reality and the possibility. The most important characteristic of the stage of formal operations is the ability to project yourself into the future, to distinguish the real from the possible and think about how it could be. Formal operations are characterized by four features: introspective thinking (a thought of a thought), abstract thinking (leaving the bounds of the real to the possible), logical thinking (the ability to take into account all relevant facts and ideas and make meaningful conclusions out of them, such as establishing cause-effect relationships), hypothetical thinking (the formulation of a hypothesis and its proving, taking into account many variables).

Thus, leaving behind the specifics and peculiarities of individual conceptual approaches, a teenager appears as the person building the connection between his action and the field of possibilities. We can call this the objective of the age differently, by a popular term "Positioning". The teenager position himself in the world, implementing, according to B.D. Elkonin, the ontological decentration. Thus, in particular, the phenomena of the imaginary audience and a personal myth are described. Teens appreciate their own place, position, opinion, appearance the most acting based on the assumption of their exclusivity (personal myth) and the interest of others in their actions and deeds (imaginary audience).

Features of the age and, therefore, the objectives of the age hidden behind them are linked with the problem of positing your own personality in the world. Myself, my place in the world, the world and my Self – these are the main relationships that are explored and tested in adolescence. The experiment with your Self

is a form of objectification of the age need for the development, i.e. the motive. Adolescence, therefore, is a period of searching for space of satisfaction in the sphere of positing yourself (through your action) in the space of possibilities for its implementation.

These global problems of the age set the general vector of motivation. The need for self-identification can get objectified in the space of the learning action, find the means of your satisfaction in school. Then the direction of education and the direction of self-construction will be unidirectional, education will become a space to meet the basic need of the age. If education is organized differently, in particular, on the grounds of the passive "learning" or even the formation of generalized modes of action, as in developmental education, if it implements the logic of deployment of training objectivity, rather than the logic of constructing yourself, education is doomed to remain unmotivated.

What is the mechanism of teenage testing, and how does it relate to motivation? Firstly, it is necessary to identify the action committed and the space it finds itself in. Secondly, it is necessary to show the possible forms of detection, and, finally, describe the screen on which this finding may be a "seen".

Teenagers go through a stage when they attribute the unlimited power to their own thoughts so the dreams of a bright future or to change the world through ideas (even if this idealism takes the materialistic form) seem to be not only fantasies, but effective actions that are changing the world themselves (Piaget, Inelder, 2003). So, the idea (idea, hypothesis) can lead to changes in the outside world, i.e. it is an action for a teenager. : The world" that will be changed by the idea is a space that will show the action, the changed world will become a screen of the action, the change will confirm the action, make it real. Thus, for a teenager the situation is motivated when there is

the action of the teenager, there is a change in the situation through action, there is a space (screen) on which the acting sees how the action links with the change in the situation. The situation of the action should provide an opportunity to experiment on the action – its consequences. It is distinction and mutual representation of the action and its outcome (consequences) that is the subject of motivation.

Fantasy formation indicated by Piaget and Inhelder is not the most unproductive way to find your identity. Another, much more dangerous way is antisocial behavior. Clearly, the society prescribing forms of behavior “does not notice” actions fit into the usual, reasonable limits. But if the action is committed against the accepted norms and forms, it is noticed, discussed and judged, becomes the subject of retaliatory action. Antisocial behavior in such a way is a form of objectification of the need in self-discovery, self-identification, and therefore a simple suppression of it is counterproductive.

Thus, we state the following. Motivation typical of adolescence requires the construction of a situation characterized by the following features:

- it potentially allows performing a lot of different actions;
- it has a screen that reflects the result of actions;
- there is no reference, initially given, “correct” action with a prescribed reference result.

In the process of taking action the relation action-form of the result is built rather than the result itself (as in the situation of mastering instrumental action). We call this activity project.

Unfortunately, what today is called the project activity in the primary or high school can hardly be regarded as such. This is creative assignments, perhaps appealing to a teenager, but

in its inner nature they rarely provide a genuine interest. Adolescents need unexpectedness, the real unpredictability of the outcome, an event of their own actions is required.

In fact, discussing motivation in learning situations, we pay attention to the fact that it is really important not only to *become an adult (graduate)*, but also to *grow up (learn)*. Limiting with the context of *preparation* for anything, for the future professional or social success of today’s student, we ignore the objectives of the age development. Consequently, the age objectives are not being solved, the age is not being lived; the normal logic of growing up is interfered.

We accept the limitations of the health of school children, but allow ourselves to grossly violate the requirements of child psychology. This is *objective* age requirements for the content of education and forms in which it occurs. If they are ignored the destruction of the learning situation and the following is happening: education is provided, but the educational product does not occur. Then education becomes fictitious.

For example, in elementary school children mostly have to master the generalized methods of actions on the material of a variety of cultural subjects, and educational product should be measured as the sum of these modes of actions mastered by the child. In the primary school the objective of self-determination goes to the forefront, and schooling becomes a material for it. Accordingly, the maximum amount of content and learning time should be taken by the humanities and experimental natural science courses, and the educational product should be expressed at the level and type of texts (products) that can be produced by the student. Skills and formal knowledge are minimized.

In high school, from this point of view, the situation is better – the age objective of the professional self-determination can be solved based on the school material, the prospects for



further education or taking a job set a social inquiry for studying, and that is why the situation is relatively favorable. The key to solving the age objective is the possibility of a pre-professional test that (at least in intention) is solved by the vocational school.

Thus, we fix the considerable source of interests in education – the logic of the age development and the form to satisfy this interest, the organization of the age-oriented education. This interest is not formed, it is not understood,

but its failure to satisfy manifests itself in the processes of formalizing training: nominally a student learns, but really – does not receive education and in the future will not be the holder of the educational product. However, the educational service is paid for (at least the taxes paid by parents). Moreover, the student and his family in the learning process or later face the problems of poor quality of education and/or are forced to compensate with their own means – as much as possible.

### References

Выготский Л.С. [L.S. Vygotskiy] Педология подростка // Собр. соч. в 6 т. Т. 4. Детская психология / под ред. Д. Б. Эльконина. (М.: Педагогика 1984). 432 с.

Леонтьев А.Н. [A.N. Leontiev] Деятельность, сознание, личность. (М.: Политиздат, 1975). 304 с..

Леонтьев А. Н. [A.N. Leontiev] Потребности, мотивы и эмоции. (М.: МГУ, 1971). 369 с.

Пиаже Ж., Инельдер Б. [J. Piaget, B. Inelder] Психология ребенка (18-е издание). (Спб.: Питер, 2003). 160 с.

Поливанова К.Н. [K.N. Polivanova] Проектная деятельность школьников. (М.: Просвещение. 2007). 196 с.

Эльконин Б. Д. [B.D. Elkonin] Психология развития: учеб. пособие для студ. высш. учеб. заведений. (М.: Издательский центр «Академия», 2001). 144 с.

Эльконин Д.Б. [B.D. Elkonin] К проблеме периодизации психического развития в детском возрасте // Вопросы психологии. 1971. № 4. С. 29-41.

Эриксон Э. [E. Ericson] Идентичность: юность и кризис. (М.: Прогресс, 1996). 338 с.

## **Проблемы мотивация учения.**

### **Возрастной аспект**

**К.Н. Поливанова**

*Институт развития образования*

*Национальный исследовательский университет*

*«Высшая школа экономики»*

*Россия 101000, Москва, Славянская площадь, 4/2, к. 411*

---

*В статье обсуждаются проблемы мотивации учения школьников. Показано, что основой мотивации является логика возрастного развития. На основании периодизации психического развития Д.Б. Эльконина выделены два типа возрастов и продемонстрированы особенности мотивации. Показано, что в младшем и старшем школьных возрастах мотивация учения связана с различием естественного и искусственного действия. Описана специфика формирования искусственного действия (присвоения образца действия). В подростковом возрасте (в основной школе) мотивация связана с осознанием себя субъектом действия.*

*Ключевые слова: потребность, мотивация, задачи развития, периодизация психического развития, младший школьный возраст, подростковый возраст.*

---