

## The orientation basis for action and the skill of study

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**Abstract.** Activity approach as a basis for the Federal State Educational Standard of the Russian Federation demands the analysis of how important is the existent system of versatile educational actions and how it can be used and extended. The extension here means that students actively appropriate social experience and acquire the skill to study. This paper is aimed at discussing the main development stages of psychic on the basis of such categories as “ontogenesis”, “phylogenesis”, “biogenetic law” and the structural elements of actions within the framework of the general psychological theory of activity. Versatile educational actions broaden the sphere of orientation basis for any action. Besides, they present the fostering component of consciousness and characterize the deliberateness of knowledge acquisition.

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### Introduction

Versatile educational actions (VEA) are to form the skills of study, self-development and self-improvement in students. This is the goal of contemporary educational system. “Our urgent task is to promote the development of versatile educational actions as a psychological component for the fundamental kernel of education along with the traditional expounding of the subject content of certain disciplines” [1, pp: 3]. The new thing in second generation standards is that it underlines versatile educational actions and their role in the system of preschool and school education on the basis of the activity approach.

Man preliminarily carries out his action in his mind. Then he performs it in practice and receives the result which satisfies his needs. Study skills presuppose the full mastering of all components of educational activity by students [1, pp: 27]. Building the psychological form of activity means the building of the orientation part of activity [2]. The orientation part of activity is aimed at choosing and correct building the executive part [3]. The activity approach makes it possible to mark out the main results of education and upbringing in the terms of versatile educational actions which help to acquire knowledge and skills and to imagine the expected results – the future. There is a goal to build this future “In such a context, the managers’ premise is, “Tell me what the future will be; then I can make my decision” [4]. In order to assess the reliability of decision, we need a criterion which is a statistical parameter that allows us to accept or reject the checked hypothesis [5; 6]. The value of the criterion depends on the character of variate transformation [7]. A variate with known accurate or limiting law is used as a criterion. This complicates the grounded use of statistical criteria to

assess the significance of checked hypotheses [5] in everyday practice. Therefore, known didactic approaches are often used in pedagogy [1]. First of all, it is necessary to foster in students the skill to study in course of learning the values of the fundamental kernel in accordance with age peculiarities. The specific tasks of fostering the conscious attitude to education are different for each stage of development and age. To show the prospect of consciousness training, it is necessary to express the objectives of education not in the terms of end result but in the terms of development [8, pp: 302]. Teacher faces the task of forming VEA as a task of development and training of motives for education. How can we train the attitude to knowledge itself?

In the world of animals, the existence of an individual becomes senseless for the species in general after his main function of reproduction is complete [9, pp: 17]. From the viewpoint of reproduction, the main content of man’s activity is to create material assets and intellectual values. Human ontogenesis significantly differs from animals as it ends with the preparation of young generation not to reproduction but to participation in social and working life. Ontogenesis and phylogenesis as the development stages of the animate world are characterized with the help of various methods: the results of studying the genome sequences [10] and the opportunities of mental reflection [11]. In this paper, the stages of ontogenesis and phylogenesis are characterized psychologically.

The second sharp feature of the psychic development problem is connected with the modern development stage of ecological problem [12]. While forming the basis of ecological culture in students, teachers use various approaches such as the permaculture approach [13]. The necessity to decide

contemporary complex issues of the ecological problem reveals the psychological and educational urgency of forming ecological consciousness on the basis of the transformation of natural-science knowledge into ecological knowledge [12]. The orientation basis of action is divided into two parts. One part deals with the conditions of forming ecological culture and corresponds to man's life in nature. The other part corresponds to the conditions of social life. The main problem of education is to teach students how to see the structure of consciousness – the sphere of meanings and senses. When, how and in what forms one should set the tasks of training educational motives and study skills in course of mastering?

### 1. Psychology in the system of the sciences of life

The problem of psychic development is the problem of life development and interaction between living organisms and surrounding nature. This problem is studied by A.N. Leontyev within the limits of concept where “activity is the main object of psychological research to the extent that it generates the psychic which is at the same time an essential moment of its performing and development” [14, pp: 14].

In the history of psychology and biology, they animatedly discussed the correlation of Muller-Gekkel biogenetic law and the regularity of human psychic development. According to the biogenetic law, every individual in its personal development repeats the history of its species, i.e. ontogenesis is a short repetition of phylogenesis. Although, this law has different wordings: organisms repeat the main development stages of their species during their embryonic (intrauterine) development; due to this, the embryos of different animals have a very similar form.

The ontogenesis of each individual is a subject to the Muller-Gekkel biogenetic law: the similarity of embryonic development features reflects the degree of kinship between various forms because they have a common origin [15, pp: 124 -125]. Ontogenesis is programmed in the genotype of an individual, but it is carried out in specific environmental conditions which determine the character and abilities for the implementation of hereditary information. While studying ontogenesis, it is important to find out how a gene contained in the DNA molecule controls the development of a certain feature typical for species, breed and individual. The mechanisms which regulate genetic changes are in focus of scientific research [16]. For school teachers and psychologists, the main thing is still the educational process planned on the basis of students' psychological peculiarities.

A.N. Leontyev notes that, at the beginning of the 20<sup>th</sup> century, there was an attempt to transfer the biogenetic law from natural science to psychology and pedagogy. The analogy between the development of a child and human development was supposed to exist. The attempt to transfer the biogenetic law directly to psychology and pedagogy does not take into account the determinative impact of social surroundings on the development of human psychic. Besides, it brings us to a thought that the main stages of child's development are determined by the history of humanity and education submissively follows these development stages without active actions.

### 2. The relation of phylogenesis and ontogenesis at the stages of biological evolution

Each new step of psychic development is based on the movement to the new external conditions of animal life. Specific processes which express an active and vital attitude of organism to reality are called the processes of activity or simply activity. An active process of interaction is performed at the expense of organism's energy and is a necessary condition for metabolism. The function of protozoan is called a simple irritability and is expressed by the ability of an organism to respond to vitally significant impact with specific processes.

When conditions change organisms become irritable to impacts which in themselves cannot determine assimilation. The function of processes which mediate organism's life-maintaining activity is the function of sensitivity, i.e. the ability to sense [14, pp: 55]. Sensitivity is a genetic irritability to environmental impact. It orients organism and has a signal function. Sensitivity appeared due to the movement of organisms from homogeneous environment to the environment of discrete objects. Sensitivity is a form of reflection specific to psychic – a subject reflection. Object always has many interconnected properties [14, pp: 59]. Some impacts of external environment determine the existence of organism; others only induce and direct its activity. The life process of organism mediates his respond to impact. That is why the structure and activity of living organism reflect the objective features of surrounding world.

The development of animal psychic has three stages: 1- elementary sensory psychic – the ability to reflect certain features of environment; 2 – perceptive psychic – the psychical reflection of integral things; 3 – intellectual stage – usually called a stage of manual thinking. At the third stage, apes can solve two-phase tasks. Two-phase activity is a top limit of psychic development right before the history of a brand new type of psychic which is

peculiar only to humans – the history of human consciousness.

Animal interacts with the objects of environment transferring its biological relations to them. The relations between animals are basically the same as their relations with other external objects. They do not have society. Their life experience accumulates by the morphologic organization of organism.

### **3. Conditions for consciousness and socio-historical development**

Conscious reflection is the reflection of objective reality separately from subject's present relation with it. The image of reality does not blend with subject's emotional experience. Labour is the basic condition for the whole human life. Labour is a process carried out between man and nature and a process of nature transformation aimed at satisfying life needs of human society. Labour is characterized by the production and implementation of labour tools. Labour tool is a thing or a complex of things that man puts between himself and a subject of labour. Labour tools mediate man's impact on the subject of labour. Labour is conditioned by joint activity. People enter into certain connections and relations for joint activity and mutual exchange of activity. The need for food and clothes is the motive for joint activity. However, the result of activity of each participant does not satisfy their needs because of the division of labour when each of them has his own function. Such processes, when the object and motive do not correspond to each other, are called actions.

The objective basis of human activity is the attitude of an individual to other members of community who give him his part of the product of joint labour. This attitude is carried out thanks to the activity of other people. "This is the reason of a specifically human form of reality reflection – human consciousness" [14, pp: 281].

The relation of the motive for activity and its object is created in joint activity of people and cannot exist outside it. The object of action may not have any biological sense for a human. Moreover, it can contradict this sense. Only the conditions of joint labour activity create the basis for action and provide it with rational human sense. The rise of action caused the main "unit" of human psychic – the rational sense of what man's activity is aimed at [14, pp: 282]. Subject discovers the connection between the object, aim and motive of activity in its sensory form – in the form of activity of human labour collective. Depending on what activity an action is included in, it gets one or another psychological characteristic. This is the main law of action

development [14, pp: 524]. The activity of people is separated in their consciousness from objects. They recognize it as a relation of objects.

Man's cognition, originally carried out in course of labour, can transform into thinking. Thinking is a process of the conscious reflection of reality in its objective features, connections and relations including objects that are not available to direct sensory perception. Such cognition becomes a possible mediated method. This method is the method of thinking. The separation and awareness of objective interaction (interaction between objects) is a necessary condition for thinking. It is possible only during labour and using tools for active impact on nature. Human mind developed together with man's learning how to transform nature. The intellect of animals only adapts their life to current environment. In general, their activity is aimed not at its conditions but at the object of their biological demand. Man takes into account conditions which determine the success for every action.

Conscious image, idea and notion have the sensory basis. The concrete form of people's awareness of surrounding objective world is language. Consciousness is the reflection of reality interpreted by the system of social definitions and notions. Human consciousness is a concrete historical form of his psychic. Consciousness acquires various peculiarities in dependence on social conditions and changes following economic relations.

The main process which characterizes child's psychic development is the learning (appropriation) of the advances of previous human generations. These advances are not fixed morphologically and are not passed on by genes as opposed to the phylogenetic advances of animals. However, such activity cannot be formed in child by itself. It is formed during practical and speech communication with other people and with joint activity with them.

### **4. Psychic reflection of external environment and its role in cognition**

Simultaneously with the formation of specifically human psychic processes in child, his appropriate functional brain divisions also form. This is a very important principle of ontogenetic process. The formation of mental actions is studied quite minutely in the papers of P.Y. Galperin [2, pp: 271]. The mastery of speech is a very important condition for man's mental development because the content of human historical experience is fixed not only in the form of material things. It is generalized and reflected in word, speech form. In this form, the wealth of accumulated human knowledge and notions about the world manifests itself for a child. "Scientific

psychology studies the most complex forms of conscious activity which is social by its origin, mediated by its structure and carried out by brain – a product of animal evolution. So it is but natural that truly scientific psychology is at the border of natural and social sciences” [17].

The promotion of versatile educational actions is a significant psychological component of the fundamental kernel of education. From the general psychological viewpoint, psychic activity is not only built according to the samples of external activity but also remains its special variety which is included in this external activity. The function and development of psychic activity depends on its place in the structure of external activity. From the viewpoint of general and basic life function, psychic activity is an orientation activity.

Knowledge acquisition is the fulfillment of certain cognitive actions by students. Action is successful if the whole system of conditions which determine the success is taken into account. If man is guided by only the part of these conditions, his action will lead to mistakes. The system of conditions an executor really relies on in his action is an orientation basis of his action [3, pp: 96]. Bearing in mind the importance of the orientation basis for action, it is necessary from the very beginning to teach children how to separate and apprehend the system of conditions to be guided by while carrying out one or another action.

Generalization is not determined by the subject of actions. It is mediated by subject’s activity, i.e. the content of the orientation basis of his actions. When the system of necessary and sufficient conditions is introduced into the orientation basis of action and the systematic focus on them in all tasks, generalization is carried out by this system of features.

The necessary degree of action rationality can be obtained with the help of the right choice of conditions for orientation. Thus the selected system of the significant features of notions is converted into the content of the orientation basis of action. “In practical teaching, they usually do not pay attention this very moment: significant features are singled out, for example, in every definition of a notion. However they are not introduced into the orientation basis of formed actions” [3, pp: 118].

### Conclusion

The main content for the biological development of animals is species reproduction. For people, species reproduction is also an important side of individual’s life. Nevertheless, the main distinctive content of human life is the creation of material and intellectual values. In accordance with this, the

content changes both for children and adults. Children are prepared for participation in public and industrial life. Adults are to share their social and industrial experience with the young generation. In the standards of the second generation, one can notice a significant contemporary peculiarity of education: it provides the key ability of students – the skill of study.

### Summary

Action is extracted from activity due to the division of social activity. Orientation takes the decisive place in forming an action. Versatile educational actions form the part of the orientation basis of knowledge acquisition which student should master as a system of actions forming the skill of study. The formation of necessary VEA corresponding to the learned material at a certain lesson is an advance preparatory moment for the creation of the orientation basis of mastered actions. The development of the VEA system is determined by unfolding cognition and the deepening fundamental kernel of education.

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### References

1. How to design versatile educational actions in primary school. From action to thought, 2010. The manual for teachers. Second edition. Moscow: Prosvescheniye, pp: 152.
2. Galperin, P.Y., 2003. Psychology as an objective science. Moscow: The PH of the Moscow Institute of Psychology and Sociology. Voronezh: The PH of NPO MODEK, pp: 480.
3. Talyzina, N.F., 1999. Pedagogic psychology. The textbook for teacher training colleges. Third edition. Moscow: The PH Academia, pp: 288.
4. Wilson, J. 2000. From Thinking Scenario to Strategic Action. Technological Forecasting and Social Change. 65: 23-29.
5. Pero-Cebollero, M. and J. Guardia-Olmos, 2013. The adequacy of different robust statistical tests in comparing two independent groups. *Psicologica*, 34: 407-424.
6. Hagen, R.L. 1997. In praise of the null hypothesis statistical test. *American Psychologist*, 52: 15-24.
7. Zimmerman, D. W., 2011. Inheritance of Properties of Normal and Non-Normal Distributions after Transformation of Scores to Ranks. 32: 65-85.

8. Leontyev, A.N., 1975. Action. Consciousness. Person. Moscow: Politizdat, pp: 304.
9. Tikh, N.A., 1966. The Early Ontogenesis of Ape's Behaviour. The Comparative and Psychological Research. The PH of the Sant-Petersburg University, pp: 192.
10. Richards, V.P., S.R. Palmer, P.D. Pavinski Bitar, X. Qin, G.M. Weinstock, S.K. Highlander, C.D. Town, R.A. Burne and M.J. Stanhope, 2014. Phylogenomics and the dynamic genome evolution of the genus *Streptococcus*. *Genome Biology and Evolution*, 12 (1-35).
11. Liebrand, M., 2012. ADHD – The appropriation of psychic functions as a problem of development. *Tätigkeitstheorie: E-Journal for Activity Theoretical Research in Germany*, 9: 31-48.
12. Yakupova, R.M., 2005. The Transformation of Natural-Science Knowledge into the Ecological Ones as a Condition for Students' Ecological Culture. PhD thesis. Yekaterinburg. The Russian Federation.
13. Lebo, N., Ch. Eames, R. Coll and K. Otrell-Cass, 2013. Toward Ecological Literacy: A Permaculture Approach to Junior Secondary Science. *Australian Journal of Environmental Education*, 29: 241-242.
14. Leontyev, A.N., 1981. The Problems of Psychic Development. Fourth edition. Moscow: The PH of the Moscow University, pp: 584.
15. Bakay, A.V., I.I. Kochish and G.G. Skripnichenko, 2007. *Genetics*. Moscow: KolosS, pp: 448.
16. Tuuli, L. and T.D. Emmanouil, 2010. Evolutionary history of regulatory variation in human populations, 19.
17. Luriya, A.P., 1978. The Functional Structure of Brain. The Natural-Science Base of Psychology. Moscow: Pedagogika, pp: 109-139.

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