

Development of high school students' research potential in the context of culture genesis

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Increasingly frequently in the context of education teachers set a task to develop students' personal qualities which can be considered to be a part of their research potential. We interpret students' research potential as a dynamic resource which includes integration of developed innate properties (intellect, sensitivity to the novelty of the situation, research activity, communicativeness), axiological and sense relation to the research results, general knowledge of the Universe, wild life, society and a man, skills to apply scientific methods of environment study, which becomes actual varying degrees in the form of range and size of high school student's approving himself a researcher while obtaining results of cognition purposefully (understanding oneself, other people, world) and provides effective reconstruction of direction and content cognitive activity, creative productivity, personal self-determination and creative self-development.

Evaluation of the development can be conducted at the level of the past as common resource of inborn and acquired during the process of socialization research qualities which provides their further development; at the level of the present – as research qualities which are required in a concrete cognitive (cultural and creative) situation; at the level of the future - as “zone of proximal development”, as research qualities which because of a number of reasons proved or are proving to be unused and which will gain momentum in the future while conducting cognitive activity. From the point of culturological approach we developed the criteria of its assessment (motivation to research, research (scientific) style of thinking, creative activity and technological readiness for search) and their indicators on the basis of which the electronic diagnostic tools were created.

The suggested didactic model of development of high school students' research potential allows the students to gain the experience of intellectual self-

organization, to make a conscious order for their own progress in their education, connected with culture of choice and a co-organization of various educational offers for their own educational program. In the context culture genesis (self-development and self-renewal of culture of a personality on the basis of the internal reasons and mechanisms in cognitive situations) we defined the following stages of development of high school students' research potential: culture exploration, culture use, culture interpretation, culture creation. Their sequence is defined according to the law of alternation, periodic repetition of different types of activity (D.B.Elkonin): the activity of one type, in which the orientation in relations system occurs, is followed by activity of another type, in which the orientation in the ways of subjects use occurs. At the stages of culture exploration and culture interpretation motives and needs for cognitive activity are mainly formed, at the stages of culture use and culture creation operational and technical capabilities are mainly formed. Moving from one stage of culture genesis to another is caused by need of development of the acquired actions in new relations or development of the new motives, which were formed while performing research activities.

At each stage of culture genesis according to the cultural and historical conception of L.S.Vygotsky the culture of research is assigned by a student in the beginning in the conditions of communication, in a zone of proximal development, in which in joint search of a teacher and a student, a group of students his motives are born, his idea of potential opportunities is formed, and then in his activity, in a zone of actual development, in which it recreates (assigns) cultural norms of research activity. Students' learning of the contents of profile subjects on the basis of problem modules leads to realization of all stages of culture genesis; having passed through them students acquire not only structure (types of knowledge, methods, values), but also functions of scientific knowledge (descriptive, explanatory and predictive), use methods of scientific cognition in culture creation situations, which complete the problem module. In our didactic model schoolchildren's move to each subsequent problem module of a training course

allows to carry out development of their research potential on a new stage of culture genesis.

During our didactic model realization we showed: schoolchildren learn cultural values; acquire the valuable relation to cognition and its results; acknowledge the need of creative self-development in creative activity; move from cultural exploration to cultural creation.