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Autodidactism:
Theory and practice of conscious choice and independent design of learning technologies

Main discussion point: orientation of educational institutions to meet the requirements of new educational standards requires:

1) different interpretation of educational goals and values,
2) adoption of new principles and approaches to the selection of educational content and to updating teaching technologies.

This work involves both pedagogical groups and individual teachers and is now being transferred from research institutes and laboratories to general schools.
Current educational situation, affecting both the substantive and procedural aspects of education, forms a social need for a teacher capable of independent design in the context of educational alternatives choice.

A modern teacher, as well as a teacher in general, solves two main tasks:

- introduces the pupil into the world around him, teaches him to live in this World in accordance with the norms and laws of existence and World development.
- develops inherent abilities of child by the means of delivered subject

However, today's teacher has to solve these problems in new, more difficult conditions.

Firstly, the world has changed dramatically and continues to change rapidly. And today's teacher, even relatively young, does not fully understand the life which he should prepare his pupils for: what knowledge and activity methods to use and in what system of values to interact with the surrounding people. As one tale has it – a maturing son once told his father: "What can you teach me, if you've never been young in the World, in which I'm young?"

Secondly, the child has changed. Born in 2000, the so-called Generation Z differs from their parents in a whole range of cognitive, affective and behavioral characteristics and value orientations. And if we want to work effectively, it is impossible to ignore these changes. Outstanding teacher Konstantin Ushinsky wrote a century ago "If we want to educate the student in all aspects, we should, first of all, know the student in all aspects."

It may seem that contemporary science should help a teacher in such a difficult situation. Indeed, various philosophers, sociologists, culturologists and politologists are trying to identify the characteristics of this new World: they come up with different names for it – "post-industrial society", "information society", "postmodern" and even “the global community in the situation of civilizational breakdown" etc. However, this is not enough: it gives very little to the teacher’s understanding of whom he should educate and what to exactly teach.

In the course of many years, the Researcheers from Psychology Institute of Russian Academy of Education have revealed and provided the pedagogical community with knowledge about the changes in the cognitive and psychoemotional development of preschool and school children. However, for a teacher in the

classroom with more than two dozen of such "new" children, this knowledge cannot help much in meeting the requirements to prepare them for the upcoming examinations and in solving the problems of education, socialization and self-determination.

In today's pedagogy there is a huge fund of knowledge about particular methods of teaching and whole educational technologies. This data may help a teacher to build an effective educational process.

However, the conscious choice of technologies and their design present certain difficulties for the teacher (even though teachers are more frequent now to implement their own didactic projects).When it comes to analyzing such projects, for example submitted for the regional competition "Teacher of the Year", contradictions, unconsciously met by the authors, become obvious. These are the contradictions are:

- Different views of teachers, the school administration, students and parents on values, goals and senses of education.
- Lack of technological solutions allowing them to be coordinated among themselves;
- Between humanistic educational declarations and lack of thorough technological elaboration of these ideas;
- Disorder and variety in interpretation of such concepts as "educational technology", "pedagogical technology", "learning technology" and the principle of terminological uniformity and accuracy;
- Between the lack of relevant skills and active participation of teachers in activities' design;

The task of training teachers for the conscious choice and independent design of such educational technologies becomes obvious. It would allow them to build their own activities in the face of changed values, goals and meanings of education.

However, while preparing teachers at the university, solution for this problem is hampered by two circumstances:

Firstly, the traditional study of theoretical and methodological foundations for such choice is built in academic logics – the logics of individual academic disciplines: philosophy of education, general didactics, developmental psychology, theory and methodology of education and upbringing etc. All of them are studied in different ways and have significant time gaps between study sessions. Meanwhile, the functioning of this knowledge in teaching practice is integrative in nature. The teacher enters a classroom and interacts with the children as a teacher, as a psychologist, and as a philosopher at the same time.
Secondly, the creation of own teaching technologies, as well as the choice of existing ones, implies a sufficiently developed ability of a teacher to self-reflect upon his own practical activity. Definitely, students often lack such an experience.

In the course of many years research, we came to some understanding of how to resolve these contradictions in the course of specially organized training. This training course is called "Autodidactism"
Autodidactism is the theory and practice of conscious choice and design of own pedagogical technologies, and at the same time - a training course for preparing students for future professional activity.

The general concept of the course can be presented in the following ideas.

Point 1.
The essence of teachers' training for a conscious choice and independent design of teaching technologies is to transfer the ideas of humanistic psychology and pedagogy from the declarative reality into instrumental and technological reality.

Point 2.
The activity of the teacher is built in two goal-setting systems:
- acquiring content of education at the level of the academic subject
- development of the student's personal potential
In the first case, the academic subject acts as a goal, in the second, as a means.

Point 3.
The solution of these contradictions assumes acceptance by the teacher of the following significant points: the content of person's development as a subject of cognitive activity (his needs for knowledge, activity, relationships, and the corresponding abilities) must be in full conformity with mastering the main components of the educational content as reflections of socio-cultural experience.

In turn, the development and accumulation of this experience is in the same dependence with the needs and abilities of members of the society, forming a kind of "didactic ring" on the content level.

Schematically, it can be represented in the following table

"Didactic ring" principle

Development of personal potential

Content of education	Structure	Personal main components
Main components of socio-cultural experience	Needs	Abilities
Learning experience	In knowledge (worldview, orientation, values)	Perception, realization, memorizing, applying, systematizing, summarizing.
Skill acquisition experience	In acquiring certain skills (organizational, intellectual, academic, communicative, reflective), in creativity, in adaptation, in self-expression.	Practical-organizational, intellectual, researching, communicative, reflective, creative.
Value-emotional relations experience	In empathy, in love, in compassion.	Abilities to sympathize, feel and love.

Expansion of socio-cultural experience

If we consider this pattern at the phylogenetic and socio-genetic levels, then we should talk about a "spiral" in which knowledge of the world, modes of activity and relationships as elements of socio-cultural experience and the corresponding groups of cognitive abilities and needs of society are interdependent and develop in parallel (coevolution).

Point 4.
This pattern is reflected in the relevant principle of education which requires the teacher activity to be aimed at "cultivating" such needs and abilities of the student that would organically correspond to the main components of the socio-cultural experience content. Thus, the learning process is closed on the achievement of a single goal - development of the needs, demands and abilities of the individual in the process of assimilation of the relevant components for the educational content.

Point 5.
The most solid and conscious understanding of educational material occurs in those lessons where it is preceded by the cultivation of a corresponding need for this knowledge or mode of activity. It also should be refracted through the student's life experience, when what the student is taught is affected by something important and valuable.

Point 6.
Developing the ability to consciously choose and independently design teaching technologies assumes for the future teacher an initial departure from academic subject in the field of philosophy of education and educational policy. Thus, the interrelation between the events, taking place in the world of education with actual problems of pedagogical practice, is actualized. This output develops the professional orientation of the teacher's personality and his skills.

Point 7.
The didactic system of training future teachers for conscious choice and independent design of pedagogical technologies includes:

- The system of goals for teacher’s pedagogical activity for the development of student personality by the means of academic subject;
- Corresponding system of joint teacher-to-students activities as a subject of reflexive analysis;
- Training program, which includes the issues of the philosophy of education, pedagogical psychology and general didactics, pedagogical design, as well as theoretical grounds, classifications and reviews of the most effective pedagogical technologies;
- Algorithms for modeling the individual components of the learning process;
- General system of pedagogical monitoring: measurements, examination, pedagogical analysis and self-analysis as products of educational and cognitive activity (author's educational projects), and observed changes in professionally significant personal qualities of future teachers.

Point 8.
The logics of the educational process is associated with the creation of such an educational space in the audience, in which the value-semantic and organizational-technological fields of activity, successively replacing each other, become the subject of reflexive analysis and lead to the formation of a professional humanistic orientation for the future teacher and contribute to the development of his design competence.

Point 9.
Algorithm of training.
Step 1: Actualization of student life experience, concerning this topic;

Step 2: A clash with constraints and contradictions that do not allow to solve the task;

Step 3: Disaggregation – going beyond the subject content in the meta-subject field of pedagogical knowledge (philosophy of education, educational policy);

Step 4: Return – analysis of the conditions of a practical task in the context of new meta-subject knowledge;

Step 5: Solution of the task - actually didactic designing (individual or group);

Step 6: Presentation of the project, discussion;

Step 7: Self-analysis.