

## Contemporary Tendencies of the High School Didactics

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**Abstract:** The article deals with the contemporary representation of the didactics development in the conditions of a new educational paradigm. The History of General Didactics, the research of its historical, philosophical and methodological fundamentals were analyzed. It is proved that new tendencies in the educational development caused changes in its very content. It is well known the process of educational system's reforming faces with another educational mentality and new demands concerning new educational relationships. The article draws much attention to the necessity of scientific and pedagogical basis of High School didactics developing. Moreover, the role of didactics in the system of contemporary pedagogical techniques that would help a student to become an independent personality is distinguished in the article.

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### 1. Introduction

The President of the Republic of Kazakhstan, Leader of the Nation, N.Nazarbayev Address "Strategy Kazakhstan-2050" is devoted to a new political course of the "established state" where knowledge and professional skills are underlined as the key points of the modern education, training and retraining system [1]. An intensive development of science and technology takes place in the system of higher education, social and political changes influence the people's way of living, make them adapt to new conditions and high school is one of the spheres that is responsible for culture preserving and the didactics of high school possesses an important part in future specialists' training. It should be said education is the light that shows the mankind the right direction to surge and to develop.

The face of education is changing rapidly nowadays due to the results of different reforms. As it is known Kazakhstan became the 47th signatory to the Bologna Process in March 2010 and is the first Central Asian State – the Bologna Process participant, a full member of the European Higher Education area [2]. A modern student-centered paradigm means that the role of the teacher in the learning process is altered greatly, and the teacher becomes the facilitator of students' learning. Thus, the teacher's role involves guiding, clarifying and advising students, helping them to resolve problems, and providing further bright examples to aid understanding. Unavoidable integration of Kazakhstan and other countries into international community requires the implementation of generally recognized educational standards. The use of innovative teaching methods in higher educational institutions has the potential to ensure the quality of the educational system on the whole.

Within twenty two years of independence the conditions which have been formed in Kazakhstan create a perfectly new Kazakhstani society. The principles of didactics of high school have been adapted to contemporary demands. Nevertheless, the most important principle of didactics is still the same: first of all – to study the conceptions of educators and researchers of the past, then, to analyze these conceptions according to modern requirements of educational system and only after that to use them in practice.

### 2. General Didactics and Contemporary Education.

To decide the problems stated above we studied the scientific and pedagogical didactics fundamentals as a whole system. First of all let's look through some outlooks of F.A.W. Diesterweg. The pedagogy of Diesterweg is defined as humanistic. According to him, the meaning and significance of life in general and human life especially, lies in aspiration to the better and more mature state in the dissemination and confirmation of the kingdom of truth, goodness and beauty. One of his well known aphorisms says that the teacher should consciously keep up with modern times, to be imbued and to be inspired by the strength of her awakening. Key components of education in accordance with Adolf Diesterweg are the following: to conform to the official conception of education, to respect the principle of independent activity of the pupil / student, to esteem the individuality of the teacher and his methods and to evaluate the dialogical teaching [3]. As it was mentioned above the basis of didactics represents the contents of education. The great scholar Ya.A. Komensky said that teaching should be

fascinating, one should teach in a perfect, reliable, fast and exciting way [4].

It is well known that the notion “genesis” in philosophical dictionary has the following meaning (Greek - “geneziz” - origin). This term was used for the first time in the Greek mythology and later in Philosophy by Fales, Heraklitus of Ephesus, I. Kant. We understand the term “genesis” in didactics as an appearing of something new, an activity that determines the process of development. The main goal in researching the genesis of didactics development is to divide the didactics development into stages, the reasons of its scientific and pedagogical development, searches and discoveries of scientists and educators.

The German philosophy of the 19<sup>th</sup> century put forward and substantiated the idea of humanistic education of personality and its identity, offered ways of reforming the system of school and university education. Among them there were such philosophers as I. Kant, G.W.F. Hegel, J. F. Herbart, and others. Followed by D. Hume, I. Kant agrees that if our knowledge begins with the experience, his relationship - universality and necessity - not out of it. However, if Hume does skeptical conclusion that the communication experience is just a habit, Kant refers this connection to the prior activity of the mind. The identification of this activity of the mind regarding experiences Kant calls transcendental study. According to Kant it is the knowledge concerning with the forms of the objects cognition [5]. In this respect the status of the German school reflects the leading trends of the global development of the pedagogical process.

So we can come to the conclusion that the first period (the 17<sup>th</sup> century. – the first part of the 19<sup>th</sup> century) can be characterized as the reproductive type of a teaching. A person who wanted to get an education was a passive listener of a teaching process. We found out in our research work there was no harmonic outlook in historical and philosophical genesis of general didactics corresponding to a world level. The subjects of inquiry were inner components of a cognitive activity, thinking, an ability to make philosophical conclusions that is why this period can be characterized as a period when didactics became a separate science.

The second period (the second part of the 19<sup>th</sup> century – 80-s of the 20<sup>th</sup> century) is characterized by a new approach to the learner. He (a learner) is represented as an executor of any activity. This idea was fulfilled with heuristic methods. The control of the teaching process was centralized and the problems of its development became the themes of scientific research in 60-70-s. Such scientists as Vygotskiy L.S., Galperin P.Ya., Zankov L., Davydov

V., Amonashvili Sh., Goncharova T., Turbovskoy Ya.S., Skatkin M.N., Lerner I.Ya., Shamova T., Menchinskaya N.A., and Rubinshtein S.L. devoted their research to the problems of didactics. They formed heuristic methods of teaching in their works. Thus, the scientific world of these scientists made a contribution into didactics development:

- the theory of a stepwise skills forming (Galperin P.Ya.) [6];
- the methods of problem teaching (Skatkin M. L., Lerner I.Ya.) [7,8];
- the methods of a cognitive activity motivation (Shamova T.) [9].

Moreover, in any sphere of science, didactics does not separate scientific and teaching aspects from an educational one. Didactic aims to join teaching and educational aims. At this period a great attention is paid to the creation of the humane educational model in the teaching process

The third period (since 1991) can be characterized by the fact that the future specialist is not considered as an executor but a creator. A new educational paradigm is changing according to the requirements of a modern society. There are natural ties between education and upbringing. These ties consist of double qualitative indexes: teaching process and developing process. Due to this, Chris Argyris, professor of Harvard Business School says: “Professionals embody the learning dilemma: they are enthusiastic about continuous improvement – and often the biggest obstacle to its success”. Here we should agree with the professor because the success increasingly depends on learning, but most people don’t know how to learn. Yet we cannot follow the idea of Chris Argyris, that the question of motivation is not the most important in the learning process [10]. On the third level a student participates in all forms of educational and cognitive activity during the whole lesson, during the whole term.

At the period of an intensive society, science and technology development the process of teaching and learning is changing. This thought was expressed by Lothar Klingberg. He says the concept of “education” for him has the same content as the concept of “upbringing” [11]. If for Lothar Klingberg the volumes of these two concepts coincide, should we follow him? It is no exaggeration to say that we cannot bring somebody up for the whole life but we can teach him as long as we or she/he could. L. Klingberg does not represent us these volumes in comparison, and there is no way to judge their coincidence, even for L. Klingberg.

If we evolve this thought we can come to the following conclusion:

- it is impossible to decide didactic problems in a “pure” type;

- there is a necessity to study didactics on the interrelationship basis with other science fundamentals. It assists to widen didactics horizons and make its contents deeper.

Here we should note in order to meet new requirements of high school we have to get rid of usual, traditional, one-side teaching. In this respect L. Clinberg considers that didactics is an important constituent of the teaching process in any sphere of science and that is why it must guarantee the teaching process as the whole one [12].

V. Okon has analyzed some methods of the education contents and its system [13]. At first knowledge is planned as a line method. The whole material is taken as in an integral system. This method is fulfilled thanks to the connection of separate parts of a course into a single entity. The second method is a concentrated one. A problem of the material is viewed from different points of view; the student, analyzing the material from different aspects, deepens his knowledge during the cognitive process. The contents of education deepens, the student gets an opportunity to reach new, high goals as well as new opinions and thoughts.

The third method is an anfractuious method. The problem is chosen and defined more exactly; the essence of this technique is that the teacher does not provide the direct solution; he uses more complicated, tangled winding way out. A student in the process of cognitive activity is always looking for different kinds of research. The fourth method is called a module method. This methods joints small elements of any theme of one problem, creating in this way the system of didactics fundamentals that consists of the following approaches; predictive, methodological (world outlook), contrastive and elucidative, operation and active, controlling. Different types of teaching exist in world national educational practice. They are fulltime and part-time, home education, distance education by means of Internet and other types of lessons in the educational process.

It is well known that the concept of learning has been enlarged in modern times. Nowadays the teacher must be aware of their role in building healthy teaching learning process and caring for those who need. In none of these fields can the teacher function efficiently without a working knowledge of psychology. It is not enough to learn facts and theory only. The teacher needs to get an understanding of psychology that she/he can use in her/his daily work [14].

With regard to the problem of learning in dynamic environments it should be mentioned the following: in the middle of the last century, learning from control of dynamical systems was studied

extensively. At that time, learning was similar in meaning to other terms such as adaptation and self-organization. Since the 1970s, learning theory has become a research discipline in the machine learning context, and more recently as computational or statistical learning. As a result, learning was considered as a problem of function estimation on the basis of empirical data, and learning theory has been studied mainly by using statistical principles. Furthermore, this point of view was underlined by deterministic algorithms in identification and adaptive control of nonlinear systems [15].

Mention should be made on the fact that modern educational system includes such aspects as humanization, humanitarization, standardization, computerization, informatization, individualization, multi-variance, multi-level education and continuity of education. The analysis of existing scientific knowledge get us to affirm that humanization in pedagogy is a social and pedagogical phenomenon, which serves as a pedagogical process, principle, practice, and as the direction of researchers in pedagogy nowadays. The goal of such an education is a personality fulfilling themselves as a subject of culture. The humanization of education as a school of the modern pedagogical idea can be characterized not as a theory, but as the existing educational paradigm, as a formation of professional qualities by means of human contents of the discipline that is taught on a definite didactic basis.

Another aspect is devoted to people's life importance and essence, to the decision of social problems; problems of intercultural communication.

Standardization creates educational documents, compulsory programs, text-books and course readers that determine the hour quantity for high school.

Individualization is realized according to individual programs.

Continuity is the connection and succession of the whole educational system. Depending on social and economical conditions, moral and vital values, a person has a necessity to continue his education; he also gains some skills of self-development and self-teaching.

All the above mentioned aspects of modern education are controlled by the mechanisms of the state educational system. According to the Republican Kazakhstani law "On Education" only institutes, academies, universities as well as undergraduate courses, post-graduate courses, courses for Doctor's degree have the status of high school. Such an institute can carry out research in any sphere of science [16]. There are internal and external mechanisms of the educational system. Teaching theory is subordinated to social requirements and is

fulfilled by means of social, economical, political, cultural, social demands and government order. The second mechanism of educational theory is goals and objectives of didactics, means and methods of teaching, the forms of organization, the relationships of the teacher and the student, the meaning and the contents of the teaching material. All these are considered to be the basis of a scientific and educational activity.

External mechanisms of the educational theory are:

- the presence of a purposeful block;
- the selection of the educational contents, the choice of educational means and methods;
- the integrity of education and upbringing;
- the integrity and mutual influence of educational theory and environment.

External mechanisms of the teaching theory are:

- the students' ability to find the solution of internal contradictions of the educational and cognitive activity;
- the students' abilities, skills and habits, memory level, thinking, efficiency;
- the teaching effectiveness;
- the relationships of the teacher and the student;
- the submission of teaching results to a cognitive activity of the student and the control;
- the transitive process from lack of knowledge to knowledge, and vice versa, a one-sided knowledge acquiring.

The teaching principles are the cognitive activity of the student for a conscious knowledge learning; an effective teaching organization; the system of a received knowledge, step-by-step knowledge learning; the connection with practice; the activity submission to theoretical conceptions and bases.

Different teaching types, styles, methods and technologies were formulated as a result of theory and practice development in history. Each teaching type possesses general features as its peculiar ones.

### 3. Methodology.

Theoretical and methodological basis of this research are conceptual principles of the theory of gradual formation of mental activities, a holistic theory of the pedagogical process and the content of education; theoretical position of student-oriented approaches in the formation of coherent image of the future specialist in the learning process in the modern university. The used methodology is the followed one: the historical and philosophical genesis of general didactics and theoretical and methodological

bases of the development of didactics' regularities through selection in high school are revealed.

In this regard we distinguish the following heuristic levels that help to obtain a creative teaching. The first level is an empirical period. On the second level the student's will-power is involved in an educational and cognitive activity. A student works with diligence, tries to do the task completely, but when he comes across with difficulties he can leave the task unfinished. During the term he works systematically but usually he shows an initiative only at the end of the term.

### 4. Conclusion.

Analyzing scientific and pedagogical development of school didactics one can see that the transfer from reproductive to empirical period was holding for a long period of time. No matter, how a student gets knowledge, what didactics objects are used, his outlook is formed as an integral system. During the seminars and practical lessons a student has an opportunity to choose a problem on his own and find alternative ways of its decision. While the student is acquiring such a system of education he acquires the skills of combinatory actions. Knowledge acquiring on a creative level stimulates the acquiring of encyclopedic knowledge. Learning is an natural for a person, and the fundamentals of didactics are the sum of teaching and education theories.

To form the system of didactics' fundamentals a theoretical methodology in activating a teaching and cognitive activity of the student was proved. Suffice it to say that new meaning of education (education as a value system, activity, the entry into the culture, the provision of educational services) along with the common understanding of education as the synthesis of a process and a result contains the objective contradictions and opportunities for research. This context is different by the ratio between the strict parameters of external educational spaces and spiritual space of the individual.

Thus, the main principle of the law of education is the teacher's aspiration to join the teaching theory and the education theory and determine the motives and the necessities of learning.

Education in high school is subordinated to a cognitive interaction between the teachers and their students. The teacher writes a program including the requirements of the typical program and the characteristics of the specialty. Didactic objects of the curriculum are concretized, divided into blocks, modules, all available text-books to put this program in practice.

The following illations can be pointed out:

- the effectiveness of educational system is based on the strategy of the society development;

- the system of education is directed to the future;

- the goals, the contents of education, pedagogical technologies, the forms of organization, controlling mechanisms are in a constant development.

So, the main goal of the educational system is the solution of traditional problems and the formation of a wider world outlook, the outlook of a planetary scale, and such common to all mankind values as ecological, economical, materialistic notions, the ability to protect nature. The function of learning theory is the development of intellectual, social, moral features.

As it was mentioned above educational diagnosis is presented as a synergetic system, which in its objectives is a system-role, the interaction of its parts - the synergistic, effect on the interaction - systemic-functional. The social role determines the goal of education (formation of harmoniously developed personality, willing and able to carry out a system of objective social roles), the tasks of education, educational content targeted diagnostics. And of particular note is the fact that that teachers and students have the same systemic-functional nature; they are organically connected and committed to a systemic-functional interaction when teaching functions (diagnosis and education) appear in the function (self-knowledge, self-regulation, and self-education) of the individual student.

The first general characteristic is that any type of teaching has the system of principles. These principles consist of separate controlling goals of didactic basis and determine the size and the rules of the educational and cognitive activities. All these, together with the activity of the student and the teacher form a teaching process. General principles of didactic objects are shown in the following classification:

- the visual methods that are used to connect concrete and abstract notions;

- the formation of the submission system to the scientific and educational goals;

- the activation of cognitive activity; the development of the students' independent search, the study of the students' controlling system that is subordinate towards the teacher as an authoritarian and bureaucratic one; the application; the admitting of collaborative pedagogic;

- the interaction of the theory and the practice; the search for more effective teaching technology that will assist in getting teaching results;

- to foresee didactic objects to solve possible problems that can appear at the acquiring the educational material during the teaching process; the creation of the conditions for independent knowledge learning by the student; to prepare didactics tasks and instructions to solve problems;

- to direct the students' development to acquire cultural heritage of scientists and wise men using the fundamentals of didactic theory, philological and linguistic word craft, historic material, culture.

The second general characteristic is the repetition of stated processes. To specify the goal constantly, to analyze and use the means, actions, methods, technologies that will help to reach the result. On one hand the teacher specifies educational goals and objectives, on the other hand he designs the students' activity, forms the plan to develop the educational level. If the teacher uses diagnostics to control the student's knowledge, such didactic objects in the structure of the educational contents as "composition", "style", "method", "image" and other terms will be classified, synthesized and form an integral didactic system.

The third general characteristic of the teaching theory is that the teacher predicts the structure of the educational activity that assists to get educational goals and choose the most effective teaching technologies. Their usage in practice forms a subjective style of the student's and the teacher's action.

Teaching methods are the ways and forms of a lesson teaching. The process of the teaching methods classification is already formed:

The first, lexical method- is verbal: conversation, interview, discussion, and lecture. The second is the practical method: excursion, tasks, laboratory work, and experiment.

The third is the checking method: tests, term paper, credit, exam, and project.

The didactic basis of teaching is the development of students' independent searching abilities. A training work is a form to organize a cognitive activity of the students (the members of the group can be constantly changed).

The rhythm, lessons are held using the same textbooks and programs according to the time-table. An academic year consists of two terms, exam period and holidays. The results are summed up at credits and exams. The whole teaching process is finished with a state exam or a degree work. The description of the teaching process has a special meaning. First, the fact that didactics is the branch of pedagogics is taken into consideration. The basis of teaching process organization includes technologies, methods, strategies, new principles and searches. The

categories of didactics are teaching, learning, education, teaching principles and requirements (the system of elements, tasks, the contents of education, forms, methods and means).

### 5. Findings.

The result of the research on the topic is drawing up a program of a special course "Didactical fundamentals of teaching in high school". Implementation has been verified experimentally by the author of the present paper.

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