

Intensification Of Cognitive Activity Of Higher Education Seekers As A Central Problem Of Modern Didactics

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Summary

The article describes technologies in a unified methodological vein, since teaching based on them at the present stage is clearly eclectic in nature and depends on the individual - "biased" - professional attitude of teachers to technologies and those ideologies that gave rise to them. In this article, the future teacher will get acquainted with only some of these technologies. With the hope that this article will help the future teacher understand the essence of the technological approach, determine his pedagogical position and improve his pedagogical culture.

Key words:

psychophysiological and socio-psychological spheres, individual, education system, educational process.

1. Introduction

The success of training largely depends on the development of a person's cognitive abilities - his attention, memory, perception, imagination, etc. It is well known that traditional education, at least at school, even at a university, is built on the basis of the memory of students. The same mental processes as imagination and thinking, which serve as the basis for the development of creative activity and initiative, are a by-product of traditional education.

The activation of educational and cognitive activity is almost the central problem of modern didactics, and active teaching methods are the main concern of subject-methodological systems. Calling the methods active is not entirely correct, since any teaching method is

designed to stimulate the student's activity (otherwise, it is not a method at all). The problem of "activating cognitive activity" is also to some extent contrived, since in psychology cognitive activity is "a specifically human form of an active attitude to the surrounding world, the content of which is a reasonable reflection by human consciousness of objective reality, its objects, processes and laws" [2, 4-7]. This definition contains the distinctive features of cognitive activity - this is an active attitude, determined by the social nature of a person.

Almost all psychologists are unanimous in the opinion that cognitive activity is associated not only with thinking, but also includes perception, memory, attention. The activation of cognitive activity is associated primarily with an extensive impact on its structural components, for example, they develop methods of more durable memorization or attracting attention. But cognitive activity, like any other activity, is the integrity of the functioning of mental processes, their indivisibility into mechanical components from the moment cognitive interest appears until the moment the goal is achieved (assimilation of knowledge, ideas, etc.). At the same time, it is clear that achieving the same goal requires different mental costs and efforts from different people, that is, "different degrees of tension of regulatory mechanisms and different amounts of expenditure of the body's functional reserves" [7].

The question here is this: is it possible to call effective cognitive activity if the result is obtained by a person due to the high intensity of labor? It seems that not, because cognitive activity is not just a process, but a social process, therefore, its improvement and ordering must be associated with the social conditioning of the psyche, and

not with a quantitative assessment of the result of the activity. From the above definition of cognitive activity, it follows that it is generated by the level of development of the social way of being of people for solving problems arising at this level. The emergence of new means of activity, the technical discoveries of recent decades, the avalanche-like growth of information have posed a new problem for the human community and educational institutions - the intensification of cognitive (and already educational and cognitive) activity. We believe that the intensification of cognitive activity is not an individual physiological problem, but a social problem, relevant at the present stage of the development of science and technology. This was noticed back in 1975 by Leontiev, who wrote that "we should put at the forefront not so much the problem of developing intensive methods that are not used everywhere and not always, as the problem of intensifying any learning" [8]. This observation of the scientist coincides in time with the rapid introduction of teaching technologies into the educational process, the main goal of which is to increase the effectiveness of educational activities, primarily by using the resource capabilities of cognitive-affective processes and by creating optimal conditions for organizing the educational process.

2. Theoretical Consideration

The term "intensification" (from the Latin *Intensio* - "intensification, tension") by its etymology indicates a purely quantitative increase in physical or mental costs per unit of time. It should be noted that in the economy and in material production, the intensification of labor has long been associated with an increase in its productivity. Under intensification, many economists still understand the quantitative increase in costs as a source of increased production. Meanwhile, the concepts of "intensity" and "intensification" in the last two or three decades have expanded their content and changed the scope. Now, not only in production, but also in social practices, this concept is associated not so much with productivity as with the effectiveness of activities, that is, attention is focused on the qualitative meaning of the terms. This is understandable: after all, it is quite possible to achieve an increase in productivity and labor efficiency without physical costs and efforts. But at the same time, a person must change, first of all, the means of labor (or, more broadly, the means of production). Even K. Marx linked the growth of the efficiency of social production with the further improvement of the tools of labor and called this the main trend in the development of production within the framework of human history [1].

It should be noted the perspicacity of Karl Marx: he understood intensification not in a utilitarian way, but rather

as a rational multifactorial system. So, he paid special attention to the effect of the interaction of people in a team, since he believed that it increases the productive power of a person with competent management of joint work. In addition to social, K. Marx also associated intensification with the economy of raw materials, resources and other factors, which allows us to consider it as an integrative multifactorial phenomenon leading to an increase in efficiency. A.I. Anchishkin believes that "ultimately the concept of intensification can be defined as one of the particular characteristics of the process of changing efficiency" [2]. He also notes that in economics, intensification has recently been understood as a process of expanded reproduction due to qualitative rather than quantitative factors. This process is based not only on new progressive means of production activity and their rational use, but other components of the activity are also involved in it: highly qualified personnel, favorable (adaptive) working conditions, optimal labor management, a higher quality subject of labor.

Today, efficiency is no longer so much an economic concept as a social one. Efficiency characterizes not just any activity, it determines the progress of social development and is the result of intensification processes.

An analysis of the works of famous scientists allows us to make the following definition. Intensive activity is such a number of actions per unit of working time that ensures high efficiency of activity due to the rational use of working time and funds, due to improving the quality of functioning of the psychological mechanisms of the subject of activity, due to the creation of optimal conditions for organizing activities. Optimization and rationalization, as well as various discoveries, inventions and improvements, enter the intensification methods. Indicators of intensive work can be considered:

high performance and quick recovery;

a short period of entering the problem, "workability";

high stability of results;

balance, consistency of actions and elements of the process;

the use of reserve physical, emotional, intellectual capabilities to ensure the optimal course of the process.

Intensification as a type of expanded reproduction (including knowledge) means the outstripping growth in the production of new knowledge in comparison with the growth of costs. In this case, the intensification of cognitive activity consists in the fact that "at each moment of time, an unchanged or even smaller amount of the subject's efforts sets in motion an increasing mass of past knowledge embodied in more perfect means of cognitive activity, creates an increasing amount of cognitive product at lower costs" [4]. The intensification of educational and cognitive activity means, therefore, that high results of cognition are achieved by students at lower costs and resources through the use of qualitatively new means of

cognitive activity. First of all, such a means is teaching technology.

The source of any process, including intensification, is the mental processes and internal contradictions of the subject, determined by some external conditions. From the point of view of the source of the intensification of cognitive activity, all the factors that initiate it can be divided into internal and external.

Internal sources of educational and cognitive activity are curiosity, inquisitiveness. Psychologists call them drives, motives, interest, striving for self-improvement. The need for self-preservation can also act as an internal source of cognitive activity.

External sources arise from the social conditions of a person's life. Sociogenic needs are a striving for prestige, for achievements, a desire to benefit society, serving any ideals [2].

Seven groups of factors can be identified that affect the productivity of cognitive activity:

- the type, nature and complexity of the tasks to be solved;
- psychophysiological and anthropometric characteristics of a person;
- organization of the workplace;
- organization of activities, that is, the presence of algorithms and instructions for activities, mode of operation, taking into account all factors and circumstances of the activity;
- sanitary and hygienic factors;
- factors of motivation of activity;
- objective conditions and situations of activity.

She considers its effectiveness to be an indicative result of the intensification of cognitive activity.

The author's descriptions of the socio-psychological mechanisms of the intensification of cognitive activity are interesting. She refers to them: communication, mood, feelings of collectivism, pride, shame and other emotional reactions and experiences. This is understandable, because emotional images, although they cannot comprehend the essence of social phenomena, they show the importance of cognitive objects for a person. So, in cognitive psychology, the fact is widely known that people in a bad mood are prone to negative conclusions, they have negative associations, judgments, they commit unfriendly acts. Whereas people in a good mood are more often capable of altruistic actions and the advancement of optimistic hypotheses [6]. Subjects in a positive mood apply more complex strategies in assessment tasks, their thought processes are accelerated, "the perceived complexity of decisions is simplified. They make inferences based on less information than other subjects." Happy "and" contented "people omit redundant details, do not get bogged down in trifles, they are confident in themselves, and therefore they are more than oppressed and dull, effective in their decisions. They are prone to optimism, mild euphoria, and therefore easily take risks" [6].

The relationship between cognitive and affective processes is well known to experienced educators and educational technologists as a psychological and pedagogical condition for "learning efficiency based on achievement motivation and affiliation." Affiliation (from Latin *affilite* - to attach, join) is a person's need for communication, for emotional contacts. According to A. Maslow, this need is basic in our country, it manifests itself in the desire to be a member of the group, to provide assistance to members of the community and to accept it from others. The presence or absence of a desire to be a member of a certain part of society (teachers, doctors, engineers) is a prerequisite for a particular professional suitability. H.I. Liimets, exploring the ways of group work and the possibility of exchanging social values (help, support, information) between students, proposed to consider the mutual enrichment of students in the classroom, i.e. in fact, affiliation as a didactic principle. A student who is dominated by the motive of achievement and affiliation has a psyche that is "selectively oriented towards the set goal" [8]. In fact, affiliation includes a number of motives: the motive of cognition, i.e. mastering knowledge through another person; the motive of self-affirmation in the presence of people who are significant to you; the motive for cooperation; the motive of communication for the sake of communication itself, i.e. a conscious desire to be among "friends", among classmates, avoidance of loneliness among people you like. If the interest in the subject is complemented by the interest in communication, then there is a noticeable activation of students in the classroom. In the technology of modular learning, the creation of a motive for achievement and affiliation is used very widely, since the obligatory motivation stage is the basis of cooperation and partnership in the process of self-meaning and self-purposeful actions of a student. Here is a list of techniques used in modular learning to induce achievement motivation and communication:

- creating a problematic situation with a mandatory positive ending, the solution to the problem must be carried out by the students themselves;
- creating an optimistic attitude ("You, of course, you can!", "You can handle it, I believe in your strength", etc.);
- encouragement, approval, benevolence in the behavior of the teacher;
- the creation of situations involving personal responsibility for the overall outcome of the case;
- bringing examples from life, science, production;
- arousing interest in knowledge of increased complexity, stimulating inquisitiveness, ingenuity, with the obligatory indication of ways to achieve the goal;
- formation of an attitude towards collective activity, reinforcement of the desire for cognitive communication.

One of the conditions for modular training is the principle of cultivating good luck, since failure is the main barrier to the personal and professional self-development of students. A symbiosis of emotional liberation and educational

activity is necessary in order for the student to feel the joy and pleasure of his own work as an integrative component of human culture [5].

In turn, non-constructive social attitudes (like "What can be expected from you!"), Leading to intense negative emotions (fear, guilt, resentment, etc.), determine the emergence of cognitive barriers, complicate the situation of interaction and distort the perception of the partner [4,11-13]. Thus, it can be argued that experiences are inseparable from the cognitive act, since "consciousness is not only knowledge, but also experience" [9].

In our opinion, the strongest social regulator of technologically organized educational and cognitive activity, the main mechanism of its intensification, is subjectivity. Subjectivity expresses a certain position of the personality and reveals those characteristics of the personality that determine its attitude to activity [10, 13]. The attributes of subjectivity that affect the intensification of cognitive activity are:

- activity,
- consciousness,
- a responsibility,
- a high self-evaluation,
- readiness for self-development and self-government.

To be aware of oneself as a subject of one's own activities and relationships, a specific internal position of the individual is needed. Describing the inner plan of a person capable of dialogical interaction, he included the following properties:

- the attitude to the other as to a value in itself, as to a being, personifying in itself the infinite potentialities of the kind "man";
- the ability for decentration, dedication and love as a way of realizing this relationship;
- creative, healing nature of life;
- the need for positive freedom;
- the ability to free will;
- the ability to self-design the future;
- belief in the feasibility of what was planned;
- internal responsibility to oneself and others;
- striving to find a common meaning in your life.

Such an internal position of the individual provides the ability for self-development [9].

The question of the subjects in technological learning is of fundamental importance, since the fate of technological innovation directly depends on the subject-subject relations of the teacher and the student. A subject is not only a person who cognizes and transforms the world around him, possessing consciousness and will, but also one who is capable of organizing his activity. "The organization of a person's activity is reduced to its mobilization, coordination with the requirements of activity, conjugation with the activity of other people. These moments constitute the most important characteristic of the individual as a subject of activity. They

reveal the personal way of regulating activity, the psychological qualities necessary for its implementation" [1]. The subject is distinguished by the desire to determine his own destiny, the way of life, the desire to expand the framework of real independence and competence. This understanding of the subject is opposed by a dependent executor ("clerk"), who receives his competence from others and realizes it in a given volume and mode [4, 12].

The introduction of educational technologies requires the formation of subjectivity not only from the teacher, but also from the student. A student's work in a technological mode requires him to have a culture of intellectual work, independence, activity, initiative, a change in personal orientations and motivational attitudes. All personality-oriented technologies are based on the synergetic postulate of self-organization of human consciousness. It is these technologies that are able to create conditions for the awakening of this consciousness and indicate the landmarks of the personal potential of self-organization. So, for example, in the works of modular technologists it is directly stated that the modular design of the training course encourages the study of this science independently, allows you to comprehend your experiences and emotions, to build an individual picture of the world. Any technology moves from targeting the average student to differentiated and individualized programs. The goal setting of the teacher - "with the subject to the student" - changes to the setting - "with the student to the subject". The consequence of such an educational process is the deployment of the student's subjectivity. From the standpoint of any technology (not only modular), the student is viewed as an active subject of pedagogical interaction, independently organizing his activities. Only the student who has changed his philistine, consumerist position to an active one, the one who has become ready to take responsibility for his studies, the one who is capable of self-actualization, will be able to work in a technological mode. The transition to a new quality of education is possible only on the basis of the formation of the subjectivity of both participants in the educational process. Subjectivity serves as the basis for the readiness to use new educational technologies.

The intensification of educational and cognitive activity cannot be solved outside of pedagogical technology, since it is technology that represents a systemic way of thinking that arose in pedagogy under the influence of the socio-economic development of society and its scientific and technological progress. the interconnection of all its parts, integrity "[10]. Having been born, the technological approach has created a different pedagogical culture. Instead of the triad "didactics - general methodology - methodology", the following emerged on the pedagogical landscape: "philosophy of education", substantiating new target priorities; "educational policy", figuring out what to teach (in a social sense); "educational

technology", indicating not only how to teach with a guaranteed achievement of the result, but also solving the problem of the strategy of personality development and the creation of adequate means and conditions for this.

There is a point of view according to which "technology appears there and then when production moves to a certain level: from craft and guild to industrial. In this case, the efficiency of production was determined by various factors: in guild production - the personal technique of the artisan himself, in machine production - first of all, the quality of technological processes. Therefore, the term "pedagogical technique" is precisely the "pre-technological" understanding of the pedagogical process [6].

This is not entirely true. Any learning technology is always based on a certain psychological theory (or a set of theories), the degree of adequacy of which to the nature of knowledge assimilation determines the effectiveness of this technology. The teacher is called upon by society to perform two functions: to promote the formation of students as professionals and to increase their social adaptability and professional mobility, for which to develop their subjectivity and initiate creative activity. To accomplish these tasks, the teacher must be psychologically prepared and methodically trained to use technology in his work.

In fact, it should be a professional of a new formation, trained on the basis of a new pedagogical ideology in a special system of training and retraining, a specialist with a high level of subjectivity and developed reflection, which allows him to analyze, comprehend and restructure his professional activities. So it should be about pedagogical professionalism and functional literacy rather than about pedagogy. The emergence of educational technologies requiring a departure from a narrow, educational understanding of their functions has changed the idea of pedagogical culture: now a university teacher with a different typological personality structure is in demand. It must be a subject labile, capable of self-development and self-determination in a situation of a mobile, constantly changing and open to the social order of education; a subject who understands his social purpose, accepting pedagogical activity as an important acmeological priority; a subject capable and ready for constant retraining and renewal, for overcoming his own functional illiteracy. On this other scale of measurement, pedagogy is indeed a "pre-technological" understanding of the pedagogical process. The measure of the teacher's subjectivity, the scale of his personality, his professional and technological culture today, more than ever, are the direct content of education. Manufacturability as a mobile methodological skill has replaced pedagogical technology, and in the structure of full pedagogical competence it is it that serves as the basis on which high professionalism and dynamism arise at the level of European qualifications and through which that functional illiteracy of

the teacher is overcome, which gives rise to almost all the problems and troubles of today's education .

New educational technologies, to be effective, must meet the following requirements:

- 1) take into account the natural psychological properties of a person and his intellect;
 - 2) rely on the internal resources of the individual, and not on coercion;
 - 3) to intensify the incentives for the creative development of the personality in its striving for actualization, which K. Rogers considers an innate desire "to express oneself, one's capabilities in order to preserve life and make a person happier, and his life more versatile and satisfying" [7].
- High technologies in the material sphere in their power contain a huge destructive potential, which is why they require high and subtle technologies of education, communication (culture, morality), since "naked" (subject) knowledge with the lack of spirituality of the students contributes not so much to the "refinement of the mind", how much of his perversion, resourcefulness (hence the problems of hacking, computer hooliganism, dirty technology in politics).

So, the use of new teaching technologies as integrative and complex means allows you to achieve four groups of goals at once and, due to this, maximize the intensification of educational and cognitive activities.

Conclusions

Thus, the implementation of the social order in the new socio-cultural conditions:

- observance of the interests of the state, i.e. the formation of students as full-fledged members of society who have mastered social experience, values and norms;
 - observance of the interests of society, i.e. training specialists in any field, socially and professionally adapted in conditions of social uncertainty;
 - observance of the interests of the individual, i.e. preparation of active, proactive and thinking individuals, ready for independent cognitive activity, capable of self-development, which allows them to professionally adapt to the labor market.
- Intensification of all levels of the educational process:
- improving the quality of training due to the specifics in the selection and presentation of content (modules, training packages, projects, structural logic diagrams, etc.);
 - increasing efficiency due to the means of cognitive visualization of educational material;
 - identification and use of incentives for enhancing cognitive activity by attracting the possibilities of didactic games, methods of facilitation, motivation of affiliation, work in the zone of proximal development, etc.;
 - deepening interdisciplinary connections in solving professional problems through the use of integration

techniques, as well as through the introduction of computers that provide access to various sources and volumes of information with subsequent analysis and processing; development of creative thinking, firstly, by reducing the share of reproductive activity, and secondly, by mastering meta-skills, since any technology requires students to have the skills of educational and intellectual work and a high degree of independence; development of experience of participation in group interaction and communication skills through the use of dialogue means within the technology, joint projects, educational discussions, trainings, individual-group forms of education, since all technologies are based on active, emotionally colored communication of students with each other and with the teacher.

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