

# Anthology of Forms of Management of Students' Cognitive Activity Institutions of Higher Education in the Use of Modern Information Technologies

Roksoliana Zozuliak-Sluchykh<sup>1\*</sup>, Nataliia Tytova<sup>2</sup>, Oleksandr Kozliuk<sup>3</sup>, Halyna Salata<sup>4</sup>, Nataliia Ridei<sup>5</sup>, Svitlana Yashnyk<sup>6</sup>, Svitlana Litvinchuk<sup>7</sup>

<sup>1\*</sup>Department of Social Educational Social Work, Precarpathian National University Vasyl Stefanyk, Ivano-Frankivsk, Ukraine

<sup>2</sup>Head of the Department of theory and methodology of vocational training, National Pedagogical Dragomanov University, Kyiv, Ukraine

<sup>3</sup>PhD student of Adult Education Department, National Pedagogical Dragomanov University, Kyiv, Ukraine

<sup>4</sup>Department of Information Technologies, Kyiv National University of Culture and Arts, Kyiv, Ukraine

<sup>5</sup>Department for Adult Education, National Pedagogical Dragomanov University, Kyiv, Ukraine

<sup>6</sup>Department of Psychology, National University of Life and Environmental Sciences of Ukraine, Kyiv, Ukraine

<sup>7</sup>Department of Methodology of Professional Training, Mykolaiv National Agrarian University, Mykolaiv, Ukraine

**Corresponding Author:** Roksoliana Zozuliak-Sluchykh    **E-mail:** [kaliuzhkasssv@gmail.com](mailto:kaliuzhkasssv@gmail.com)

## ABSTRACT

The article presents the results of theoretical, psychological and pedagogical research on the effectiveness of management of cognitive activity of students of higher educational institutions in the conditions of quarantine and coronavirus epidemics. The notion of postmodern model of education as a mixed type of pedagogical technologies of education and with orientation on educational and professional needs of students is substantiated. The postmodern model of teaching is described through the actualization of the creative potential of the pedagogical process, while preserving the classical educational paradigm. Peculiarities of students' cognitive activity management in the postmodern model of education are analyzed. Important personal and motivational characteristics of the student as a subject of educational activity in the process of his professionalization are reflected.

**Keywords:** Motivation, needs, postmodern model, cognitive activity, distance learning, professional development.

## Correspondence:

Roksoliana Zozuliak-Sluchykh  
Department of social educational social work, Precarpathian National University Vasyl Stefanyk, Ivano-Frankivsk, Ukraine  
Email: [kaliuzhkasssv@gmail.com](mailto:kaliuzhkasssv@gmail.com)

## INTRODUCTION

The urgency of the research problem necessitated an integrative approach to the management of educational and cognitive activities of students of higher educational institutions in quarantine. The world experience of using distance technologies in coronavirus epidemics has made it possible to replace classical education with the traditional model of teaching an information-technological approach to the management of cognitive activity of university students. The use of innovative technologies in distance learning is able to actualize the motivation of student youth to learn, to diversify their individual-oriented strategies of cognitive activity. It is possible that the adaptation process in the learning environment under the traditional model of learning will be more effective for freshmen. Instead, in the postmodern educational model, students' cognitive activity is more effective in general, because it is positively correlated with the formation of their internal motivation to learn.

The new paradigm of education with the use of modern pedagogical models orients the university teachers to identify the individual educational and professional needs of the student and develop programs to update his motivation to achieve academic success and, accordingly, to meet his requirements. The fundamental idea of European educational models is the active and independent cognitive activity of the student. The individual system of student self-regulation in the postmodern model of learning is the foundation (basic

basis) for the manifestation of his personal and professional characteristics as a subject of educational and cognitive activities in the process of professional development. L.A. Martynets notes that the experience of many countries (Greece, Denmark, Spain, Great Britain, Russia, etc.), which are part of the network of productive institutions, proves that education could be reoriented from the transfer of knowledge and control of their formal assimilation for the organization of motivated, independent practice-oriented learning, the results of which are presented in a specific socially significant product [11-14]".

The integrative approach to the analysis of the world postmodern education system on the experience of European countries and in particular, the postmodern model of teaching Ukrainian society, includes social contacts in the system "teacher - student" taking into account modern information technologies and various forms of distance learning. Despite the modern integrative approach to the analysis of the effectiveness of management of educational and cognitive activities of students, the issue of manifestation of their individual characteristics and optimal means of self-regulation in understanding the initial realities of professional life taking into account their internal personal resources is insufficiently studied.

## MAIN TEXT

The problem of cognitive activity of students is the subject of scientific research of many psychologists and

teachers. Psychological and pedagogical analysis of the management of cognitive activity of students of higher educational institutions in the postmodern model of education covers, in our opinion, two humanitarian strategies with appropriate methodological and methodological technologies. The first is related to the study of the influence of European models of education on the cognitive activity of students, comparing the tradition of national education with world experience, theoretical analysis of English sources, analysis of the categorical apparatus on this issue in related sciences. The second - reflects the practical interest of scientists to study the effectiveness of management of educational and cognitive activities of students, identifying factors for its improvement.

The postmodern model of teaching systematizes knowledge in the field of pedagogical modeling of management of cognitive activity of students in the conditions of mainly distance learning, as well as important for university teacher's description and analysis and improvement of mixed system of educational activity in education, introduction of European achievements of psychological and pedagogical science and practice. The postmodern model of learning described in the article is considered by us as a pedagogical system, as well as mainly a process compared to the result. In encyclopedic dictionaries, the model is an abstract representation of the theory, in the construction of which the main requirement is its adequacy, i. e. compliance with reality, the essential properties of the object. An integral feature of the scientific model is the system [12].

Postmodern model of learning as a complex educational system, which is interconnected classical and postmodern structures of education, built on the principles of determinism (due to social crises in education and actualization of needs of participants in the educational process), indeterminism (universal relationship of our phenomena) and additionality (as knowledge of features of educational activity of students by means not only of psychology and pedagogics, but also information and technological disciplines). Quarantine conditions of education led to a mixed type of educational models in education, which we called the postmodern model of learning. It includes elements of the following educational models:

1. European model of education, the use of which forms the habit of making choices and being responsible for it. The model allows students to independently choose courses from the lists offered in higher education institutions. Such an educational model teaches the student to think independently, to look for additional sources of information, not limited to the acquired knowledge and learn new knowledge based on the old, which explains the new [23, 24].
2. Phenomenological model of education (A. Maslow, A. Combs, K. Rogers, etc.) provides for the personal nature of learning, taking into account the individual psychological characteristics of students, careful and respectful attitude to their interests and needs. Education is seen as humanistic in the sense that it most fully and adequately corresponds to the true nature of man, helps him to find what is already embedded in it [1-8, 22, 23].
3. The non-institutional model of education (P. Goodman, I. Ilyich, J. Goodled, F. Klein, J. Holt, L. Bernard, etc.) is focused on the organization of education outside social institutions, in particular higher education institutions.

This education in "nature", with the help of the Internet, in the conditions of "open schools", treble training, etc. Proponents of this trend advocate the right of the individual to autonomy of development and education [23].

4. The traditional model of education (J. Majo, L. Crowe, J. Capel, D. Ravich, C. Finn, etc.) is a model of systematic academic education as a way to pass on to the younger generation the universal elements of the culture of the past, the role of which is mainly to the formation of basic knowledge, skills and abilities (within the established cultural and educational tradition), which allow the individual to move to the independent acquisition of knowledge, values and skills of a higher rank, compared with those already acquired [12-17, 21, 22]. The problem of the phenomenon and manifestation of postmodern trends in education and pedagogy is considered in the works of such leading American philosophers of education and postmodern educators as Stanley Aronowitz, Henry Giroux, William Doll, Denis Hlynka, Jay L. Lemker, Andrew Yeaman, Clive Beck, John Belland, Sandra Kerka, Barbara Martin and others. Postmodern theory of cognition differs from the traditional model. Its characteristic features were the "delegitimization of knowledge" in J.-F. Lyotard, "demystification of language" in M. Foucault, "anti-universalism of knowledge" in R. Rorty.

These theoretical positions pushed scientists to form a new pedagogical theory and a new postmodern education, which initiates multivariate strategies for its implementation, cultivates the universality of knowledge, human creative activity and subjectivity, creates social, educational and psychological conditions of personal well-being [6, 8-11, 17, 21]. Postmodern realities of education are associated with rethinking the need for new reforms, loss of values of modern education, crises in the professionalization of not only future professionals but also their senior mentors. In this regard, it is important to find ways to preserve the best technologies for optimizing the cognitive activity of students of higher education.

Postmodernists argue that there is no absolute and true knowledge. Constructed knowledge should be useful, one that can be applied in practice, and not abstract, which only describes the facts. Postmodernist theory of cognition tries to destroy the classical structure of the relationship between teachers and youth, to rethink reality, to cure thinking from totality, to include in reflection individual worldview scientific experience, as well as the experience of borderline situations and everyday life [5]. The postmodern method of construction makes it possible to change priorities in the learning process, bringing to the fore equality in the relationship between teacher and student as a new educational value, in terms of information exchange and recognition of its validity [11].

The change in the status of knowledge in society has led to the formation of a new educational paradigm, in the center of which instead of the question "what do students know?", The question is asked, "who are they?" Postmodernism does not recognize the integrity, the universality of knowledge, but puts parts, differences, differentiations, pluralism in the foreground, that is, it denies the so-called "knowledge" model of education and considers knowledge as a subjective construction. It is this approach to knowledge in educational activities contributes to the formation of self-sufficient,

autonomous personality [2]. According to I.P. Podlasy [16], the tendencies of postmodernism are manifested at the following stages of the pedagogical process:

- a) the stage of goal setting.
- b) the stage of realization of the goals of education and upbringing.
- c) the stage of evaluating the results of educational activities.

Pedagogical postmodern goal setting involves the formation of a person capable of self-creation, change and improvement, considers individual values of the individual a priority in the pedagogical process. Postmodernism insists on the "deconstruction" of traditional relations and considers democratic and equal dialogue acceptable. Today in Ukrainian education, despite the relative authoritarianism of teachers, there is still a tendency to change the style of relations between teachers and students. The priority of active, interactive and creative methods and forms of learning is fully recognized.

The pedagogical process goes beyond the space of the educational institution and turns into a hyperspace, which includes a society with an "open" type of education system and shifts the emphasis on the formation of self-regulation of the individual who is able to learn throughout life. At the stage of evaluating the results of educational activities under the influence of postmodernism recognizes the priority of the learning process over its results, the use of various forms of assessment, puts at the center of the educational process a particular student with his cognitive abilities, learning goals and professional values [16].

The postmodern system of education is still based on the experience of the best methodological technologies of traditional education. In this regard, P. Avtomonov provides a classification of teaching principles, which "is based on the functional-activity approach to teaching in higher education, namely: the principle of building a credit-module program: the purpose of information material, a combination of integrative and specific didactic goals, modularity, relative independence of each module; principles of forming the content of the subject: optimality of educational material in the module, structuring of the content in the middle of the module, pragmatism, dynamism; principles of optimization of teaching activity: complex realization of didactic functions, problems, step-by-step formation of creative-cognitive mental actions, reliance on different types of clarity, rating assessment of knowledge, individualization, application of technical means of teaching; principles of optimization of independent work of students: conscious perspective, scientific organization of independent work, cooperation; principles of communicative interaction between teacher and student: personal approach, a combination of group and individual forms of learning, dialogic communication [26]. All these principles have been successfully applied by teachers in distance learning thanks to modern information technologies.

O. Andreev, V. Kukharenko, E. Polat, A. Khutorsky and others. define distance learning as a type of open learning with the use of computer and telecommunication tools that provide interactive interaction of all subjects of the educational process and independent work of students using information network materials, most of which are prepared by the teacher. Pedagogical approaches to

computerization of the educational process are described by B. Gershunsky, E. Mashbyts, I. Pidlasy.

However, the available research does not address such important issues as the need to apply a holistic set of methods and techniques to enhance cognitive activity in the new conditions of use of modern information tools by educators. The issues of the teacher's role in distance learning, the use of computer-mediated dialogue in teaching, as well as the diagnosis of students' academic achievements, in particular the levels of their cognitive activity, remain unresolved [18]. O.V. Sobayeva on the basis of methodological approaches of the above scientists developed an experimental program of pedagogical technology of distance learning, aimed at activating the cognitive activity of students, focusing on the priorities of psychological and pedagogical motivation, problem-searching independent activity of students, creative purposeful dialogue, diagnostic methods. achievements.

B. Gershunsky, O.V. Sabayeva, I. Kharlamov and others. argue that modern information technology is able to provide educational activities with diverse, compact and operational means that serve the active cognitive and creative solution of significant contradictions in the theory and practice of the student. These tools are determined primarily by the teacher and to some extent by the student himself. The teacher acts as the author of the original curriculum, developer of problem tasks, organizer of electronic discussions of scientific and developmental nature, consultant at all stages of cognitive activity and, finally, the main expert of educational achievements. The student becomes a co-author of their educational programs, an active participant in the educational process [18]. We believe that in the modern world, the postmodern model of learning has integrated distance, traditional and individual-subject - in the education system of many European countries. An important effective characteristic of the postmodern model of learning is the individual-subjective activity of students in cognition, in mastering competencies due to certain personal and professional qualities, independence in processing the material.

Educational and professional competencies are formed more successfully due to the reduction of external, in particular motivational influences of teachers on the student's educational activities. An indicator of the productivity of the postmodern model of learning is the achievement by students of both procedural and effective success. Management of students' cognitive activity in the postmodern model of learning under quarantine has its own specific features: individual capabilities of students, their personal resources in professionalization, with a focus on creative processing of a large flow of information - on the one hand, and to some extent overestimated objective expectations. training programs - on the other. Important in such educational interaction is the formation of practical professional skills on the basis of acquired theoretical knowledge. The counseling of professional teachers in distance learning may not be enough to gain practical experience.

In this regard, we believe that the effectiveness of students' cognitive activity should be staffed by psychologists who are able to professionally explore the features of their cognition, memory, thinking, attention, creative imagination, feelings and perceptions and develop individual programs based on test results. to increase the productivity of mental processes in the

learning environment and taking into account the purpose of forming creative professional thinking and the specifics of the specialty, respectively, the qualification level.

Peculiarities of students' cognitive management in the postmodern model of learning are related to information technologies, their constant updating, expansion of cognitive space within each discipline and transformation of cognitive-professional cognitions into a structured experience. In this regard, the management of students' cognitive activity in the postmodern model of learning is carried out through the following approaches: motivational-psychological, information-technological and integrative. The latter is optimal because it covers psychological and pedagogical, information technology, innovation and remote methods of this management. Subjective indicators of the effectiveness of management of cognitive activity of students are the success of educational activities of students and their intrinsic motivation to learn, which are formed not without its objective indicators, professional competence of teachers and their organized social partnerships.

Intrinsic motivation to teach students is an important psychological factor of cognition, which integrates virtually all subjective indicators of management of cognitive activity of students, their personal and motivational characteristics, professional self-awareness and positive self-affirmation in connection with the willpower, experience of success and pleasure.

Management of educational and cognitive activities of students is carried out due to external motivation, in particular the modular rating system of control and evaluation of their academic performance. Timely introduction of modern information technologies in distance learning, in particular the availability of computer testing, information communication, electronic libraries and lecture courses and methodological technologies for distance learning in quarantine are integral components of the postmodern educational model.

According to psychological surveys, for most students the learning situation - distance, in quarantine - is an urgent crisis situation in their professionalization. It can be associated with a state of maladaptation that occurs at the psychological and social levels and is expressed in the loss of basic motivation, changes in life values, behavioral disorders, features of "motivational" personality profile, dissatisfaction with current social needs and, consequently, inability to realize certain motives of activity, deformation of motivation of achievement, emotional instability, internal contradictions in the value-motivational sphere [15].

NM Pilipenko investigated the motivational mechanisms of adaptation of the modern student's personality to educational changes and its motivational characteristics that can provide quality training in a situation of non-normative crisis of professional development: it is internal motivation to study, shift of motive to goal or mechanism of motive to goal as an indicator of a high level of adaptability of the individual to the requirements of the professional environment; the mechanism of "achievement" as a set of internal prerequisites that ensure the academic success of the future specialist, the conformity of the psychological content of self-regulation of his behavior to the expectations of the professional environment [13].

The researcher describes the system of purposeful psychological and pedagogical influences of increasing the level of functional and professional adaptability (indicators of its academic success and effectiveness of cognitive activity) of students in a situation of educational change, aimed at correcting motivation and forming a constructive attitude of the individual to the crisis of professional development and conducting with students in need of psychological assistance, psycho-training - developing confident behavior in a situation of non-normative crisis of professional development, personal and professional growth, communication skills and motivation to succeed in professional activities [14]. Such classes can be successfully organized online.

TO Gordeeva [4] studied the cognitive-motivational variables of educational and cognitive activities (optimistic style of explaining to students the successes and failures of educational activities, the idea of controllability of academic achievements). Successful people have a sense of control over the learning process, faith in their potential and higher academic self-efficacy. Cognitive-motivational variables are predictors of the variables of the target block and the block "response to failure". In particular, higher academic self-efficacy and control are predictors of more effective coping strategies, such as proactive problem solving and seeking help. The data obtained indicate the need to separate positive and negative life situations in the analysis of cognitive style in the context of success. It is interesting that there are no gender differences in the cognitive-motivational variables of students in the study of T.O. Gordeeva. The results of her research do not correspond to the data of K. Peterson and L. Barrett [23] obtained on American students, who showed a link between academic achievement and optimistic perception of negative learning situations but confirms the data of English researchers P. J. Corr, J. A. Gray [22] on the role of optimistic attributive style of success in business success. We can assume that the identified contradiction is related to the specifics of culture, positive thinking in Russian and American students and the specifics of higher education, where the ability to positively perceive difficult life situations and adapt to them becomes critical [25 - 27]. Sources of demotivation in the cognitive activity of students are: traditional system of education with various forms of external motivation to the detriment of internal development; emphasis on memorizing knowledge with insufficient attention, critical thinking, learning skills, effective learning strategies, goal-setting and reflection strategies, creative problem-solving skills; insufficient use of problem-based and research teaching methods, which provide a productive interest in the process of cognition and the search for new knowledge; tendency of teachers and parents to excessive control of the educational process and its subjects, ignoring the initiative, which negatively affects the needs for autonomy and competence; insufficient motivation in the process of cognition of teachers themselves, who experience symptoms of burnout and learned helplessness, which does not allow students to observe optimal models of intrinsic motivation. In this regard, the sources of internal motivation of educational activities are: purposeful construction of the educational process in accordance with the laws of development of internal cognitive motivation; meeting the basic needs of the student in competence, autonomy, acceptance, cognition, achievement and self-development; application of

resources of modern psychologically substantiated technologies of training; maintaining students' sense of their own educational competence, self-efficacy and the development of constructive optimistic thinking in them; the presence of motivating feedback from teachers [28 - 32]. The postmodern model of learning in the modern European space of education is a "mixed" form of learning. Today, this form of education is used in many Western universities and is most suitable in the current situation in Ukraine.

The use of blended learning allows to achieve the following goals: to expand the educational opportunities of students by increasing the availability and flexibility of education, taking into account their individual educational needs, as well as the pace and rhythm of learning material; to stimulate the formation of an active position of the student, increase his motivation, independence, social activity; individualize and personalize the educational process, when the student independently determines their learning goals and ways to achieve them [3].

The key point in blended learning is choosing the right combination of methods. There are 6 such models of Blended Learning with different emphasis, needs and costs: 1. Face-to-Face Driver ("Driver - full-time education"). The teacher personally provides the main volume of the educational plan, if necessary, including online learning as an auxiliary. This model often includes classroom and laboratory work on computers.

2. Rotation Model - rotation of the schedule of traditional full-time education in the classroom and independent online learning in a personal mode (for example, via the Internet according to the plan of links compiled by the teacher.

3. Flex Model ("Flexible model") - mostly used online platform, the teacher supports students as needed, from time to time works with small groups or with one student.

4. Online Lab ("Online Lab"). The online platform is used to conduct classes in the classroom. Such training takes place under the supervision of a teacher. Such a program can be combined with the classic within the usual academic schedule.

5. Self-Blend Model. The student decides which of the Brick-and-Mortar courses he needs to supplement with remote online classes.

6. Online Driver Model ("Driver - online learning"). Basically, this model involves learning online - through a platform and remote contact with the teacher. However, optional or on request can be added face-to-face classes and meetings with the teacher [27 - 29].

We compared the results of a study of the peculiarities of development and levels (from high to low) of cognitive activity of students of two universities - with the classical model of learning, with a slightly authoritarian and postmodern pedagogical interaction, in quarantine, with the widespread use of information technology and partnerships between teachers and students, giving the latter the freedom to choose the planning of their cognitive activities.

The study confirmed that students with traditional learning strategies are dominated by reproductive (conscious memorization and reproduction of the sample) and productive (original conclusions, manifestation of critical thinking, application of acquired knowledge in practice) cognitive activity. The expansion of new ways of worldview and cognition in distance

learning and with free choices of learning, without departing from the planned topics of educational material allowed the dominant manifestations of not only productive but also creative (initiative in determining the means of cognition and creation of new through deep penetration and their connections) cognitive activity of students. In addition, students with a high level of cognitive activity are intrinsically motivated, need knowledge as the most important motive for cognitive activity, a positive attitude to the chosen profession, developed cognitive interests and enjoy learning. Such students show initiative in the learning process and creatively master the means of cognitive activity. Students with an average level of development of cognitive activity are dominated by a sense of balance between satisfaction with the profession and doubts in it and there is external motivation.

Students with a low level of educational and cognitive activity are unsure of their abilities, do not show interest in creative research. It is possible to activate their cognitive activity through the development of professional motives and cognitive abilities in the conditions of distance learning with the inclusion of specially selected by the educational psychologist-consultant forms and methods of classes with game modeling of creative process and partnership. It is desirable that these classes be subordinated to the goal of forming students' realism in assessing their own capabilities in accordance with the educational requirements, self-regulation, responsibility for decisions, the ability to work in a team.

Our integrative approach to the analysis of the postmodern model of education made it possible to describe it as a complex structural-procedural system based on the principles of educational democracy, unconditional acceptance of individual features of educational and cognitive activity of the future specialist and his personal and motivational characteristics. Researcher IG Utyuzh [19] believes that postmodernism has a pronounced tendency to spread in educational systems; is a fragmentary background of all innovative activity of educational subjects; provides consumer guidance that is being formed in the minds of learners; makes adjustments to the motivational basis of their cognitive activity; and also, has not only positive but also negative characteristics. Thus, the receipt of "educational services" by students has affected the quality of education. Paid education instills in the student confidence in the future, frees from responsibility, expediency and activity, motivates to irrational stay in the walls of the university with a guaranteed result in obtaining a diploma. The narrative of the process of knowledge transfer has made it hopeless in terms of impact on the perceiving subject. The indifference and boredom of our students can be justified by disbelief in science.

In this regard, postmodern realities, which are manifested globally in education, have today become the subject of analysis in the educational environment and still difficult to master in practice an element of real educational experience [19, 31]. Postmodernism is designed to provide opportunities for reorientation of education to the requirements of the subjects of educational and cognitive activities - participants in the educational process, to implement the principle of personal and professional development of students -

"quality of life" and focus on learning the values of social welfare.

In the postmodern model of teaching, the management of students' cognitive activity is more multifaceted and more responsible for the teaching staff in terms of distance learning and quarantine. It is impossible to consider it outside the motivation of educational activity - one of the most complex and surprisingly insufficiently researched scientific directions since the time of his research by H. Heckhausen.

The motivation researcher wrote that the analysis of achievement motivation in our time has covered the whole world, not just the United States; it is studied in Japan, Australia, Brazil, Germany, England, Italy, and the Netherlands. It still seems likely that the results of the near future will be worthy of hard work [20, 32]. Today, the classic provisions on the motivational foundations of cognition have become the basic basis for quality management of cognitive activity of students.

It is only important that the motivational strategies of cognitive activity of future professionals in the postmodern education system do not become strategies of "survival" in a crisis postmodern society. Their focus on finding individual opportunities for each university student can improve the quality of educational services in the context of global social crises caused by pandemics.

## CONCLUSION

The success of independent cognitive activity of higher education students depends on the integration of psychological and pedagogical technologies of the postmodern education system, which combines the best methods of traditional, distance, European and individualized learning models. The individualized model of education should be purposefully leading, as it provides personal and professional development of students through the study of their individual style of cognitive activity and educational and professional needs of customers of educational services.

Management of students' cognitive activity in the postmodern model of learning covers a holistic set of motivational components, taking into account the pedagogical technology of distance learning. With the help of modern information technologies, it is possible to trace the dynamics of cognitive activity and academic success of students or to develop them through psychotraining, electronic discussions with virtual dialogues in the system "teachers - psychologist - social pedagogue - students", which can be justified by many real meetings of all participants. in the conditions of direct pedagogical interaction.

Undoubtedly, the activation of cognitive activity of university students is facilitated by a personality-oriented activity approach: self-regulation, motives and goals of learning and cognition, their information-cognitive basis with electronic programs and planning as constant components of traditional educational model.

The postmodern model of activation of students' educational and cognitive activity is based on the principles of acceptance of their professional competence, nonlinear thinking, initiative, personal and professional characteristics.

Innovative information technologies for the development of cognitive activity of students allow them to quickly learn the material and quality management of their independent work. They serve an important purpose - to create psychological and pedagogical conditions for the

activation of cognitive activity in the participants of the educational process.

Equally important is the introduction of pedagogical innovations in the school with the modernization of personal aspects, the use of information technology to differentiate the professional orientation of cognitive activity and individual personal and professional characteristics of young people.

With all the variety of psychological and pedagogical means of optimizing the cognitive activity of students, one of the important pedagogical goals is the formation of future professionals' skills of self-regulation, intrinsic motivation to succeed in learning, creative professional thinking, independence in solving unexpected problems. Thus, postmodern learning with motivational foundations of knowledge management has a humanistic orientation and value versatility.

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