PEDAGOGY

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INTEGRATIVE COURSES AS A METHODOLOGICAL FOUNDATION IN THE SYSTEM OF CONTINUOUS EDUCATION OF THE TWENTY-FIRST CENTURY

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Considered are the theoretical and methodological bases for the development of integrative courses as a holistic process of shaping specialists, both personally and professionally, that puts in place the conditions necessary for developing further their creative personality; with a level of creative potential marking all the stages of activity of the person, that retains his / her creative essence – the tendency to search and transform.

Introduction

The study of theoretical and methodological bases for designing integrative courses in a continuous system of education is determined by the social and practical significance of the problem of self-improvement of the creative personality and his/her professional self-actualization.

At the present-day stage of development of the society, under the conditions of Ukraine's higher education structural reform and content improvement, a necessity is emerging to actively search for new reserves in order to raise the quality of training specialists, their competence and individual personal maturity.

The present-day socioeconomic conditions and contradictions present convincing arguments in favor of reforming the existing mass-reproduction concept of education into a concept of the individual-creative approach in the training of students – future specialists, who are capable of creative self-improvement. A transition to the pedagogical value of student self-development is the formula of new pedagogy of tertiary education. It is during student years that a person acquires the power of reflection – comprehension of limits to one's own individual knowledge and the ability to go beyond these limits.

At the beginning of the twenty-first century, the notion of 'acquisition of a profession' underwent some qualitative changes as regards the 'perception of the world' framework. Contemporary science has proven their structural unity and integrity. Stages in the evolution of scientific cognition have become clearly identified: the classics, the non-classics, the post non-classics – each of which has its own criteria, paradigm and ideas about outcomes. In this situation, there comes a qualitative change in the outlook and the method of its formation – thinking that primarily relates to individual and collective subjects of vital activity. This makes it necessary for educational systems to take stock of their new situation in the present-day world: their role, position, self-determination, content and the methods of existence.

In order to overcome the crisis in the educational paradigm, that is most striking in the professional training of students at higher technical educational establishments, it is essential to review its basis, understand the essence of the process of education as an interosculation of the inner and outer worlds, their structure and interaction on the basis of the principles of synergy of self-organization in activity, and master the "planetary" model of information structuring for learning purposes.

The state of their interosculation envisages that the inner world possesses everything there is in the outer world in an ideal form; and the outer world possesses everything there is in the inner world in a realized form, that is – their equal significance.

Priorities of materiality, dominant in the past century, have disrupted instances of their parity. A return to these instances of parity requires of everyone an understanding of his/her own responsibility for processes that take place in the inner and outer worlds.

Their common nature, proven by modern science, allows us to speak about their similarity which is especially important for understanding the lesser studied inner world. The systemic nature, integrity and the ability to be organized, that are typical of the material world, also encompass the world of subtle substances and the inner world. The realm of the inner world – consciousness is a system, and if successfully structured it can be represented as being composed of elements (sub-systems): "needs", "standards" and "abilities".

Requirements that are now being set by the individual and society for educational outcomes have determined a necessity for cardinal changes in both content of education and pedagogical

technologies. These requirements and goals are implemented in the creative approach, now being put in place in the system of professional education - in the system of continuous formation of creative thought and development of creativity in both secondary and higher school students. The basic mission of a creative system of education is to arouse one's creativity and boost the latent creative potential.

It is quite clear that implementing this mission, which is, undoubtedly, of national importance, could only be up to creative teachers possessing a sufficiently developed personal creative potential, who, themselves, are not only highly cultured and competent in psychology and pedagogy, but who can also use alternative approaches to resolving various psycho-pedagogical situations and organize their own activities on a creative basis.

In addition, the social significance of studying the patterns of designing integrative courses, as a methodological foundation of the system of continuous education, is determined by the fact that it:

– identifies the productive-creative trend in a person and constitutes the backbone of the person's social orientation in life;

– is the major determinant in professional creativity;

– facilitates creative professional development and social self-actualization of the specialist;

– conditions the adaptive ability of the human body, as a physiological system, to the specifics of professional activities.

The topicality of this study, therefore, is determined by the fact that the problem of providing rationale for the theoretical and methodological foundation of developing integrative courses in the system of continuous education has not been worked out sufficiently and is of crucial importance for further professional activities of the specialist under present-day market economy conditions.

The object of this study is the system of continuous education, and the subject is the theoretical and methodological foundation of developing integrative courses in the system of continuous education.

Essential content of the study

The system of the so-called "supportive" education, that took shape in the past, is clearly not in line with the demands of the post-industrial civilization now being formed. Radical change in educational practices can only be achieved by means of innovative education that is the main precondition for their theoretical review, as well as for Ukraine's Higher School integration into the world educational context.

The content of education in the twenty-first century is to be aimed at nurturing persons with a sense of personal sovereignty, free and creative, capable of continuous self-identification not only in relation to their professional activity goals, but also in relation to human values, "striving to be", self-realizing, self-actualizing in the totality of their human essence. Only such persons are capable of pursuing their aspirations, getting involved in social co-creativity, substantially influencing social renewal, its conscious forecasting and implementation.

Today creativity, as the process and result of the innovative process of education, is largely represented as a kind of personal adaptation mechanism to deal with the on-going social change. The dynamism of economic and political developments encompasses changes in the inner life of a person. In order to be internally compatible with present-day realities, specialists are not only to be able to get adapted to new situations but also to change them, while changing and developing themselves. Hence – the special interest in studies that deal with the shaping of an active creative personality, the mechanism of creative thinking throughout the period of continuous education.

Important pedagogical requirements for a creative educational process – continuity, succession and student inclusion in the active educational sphere, in independent management of the creative process, – allow every student at any educational level not only to develop the initial creative potential, but also develop a need for further self-actualization, creative self-improvement, developing one's own self-concept. This, in turn, requires a review of the content and technologies of education, as reflected in the works by Ukrainian and foreign authors [1–6].

Furthermore, the importance of the problem of developing personal creativity with the use of integrative courses in the system of continuous education is determined by a number of aspects:

– *social*, because we are not simply shaping a new person having a specific mode of thought capable of radical change and transformation, but a specialist of a new formation – an innovative specialist;

– *scientific*, because of it being the means of knowing creative abilities in the areas of intellectual and social creativity;

– *practical*, because it is possible to use new technologies to immediately develop creativity.

The above-mentioned aspects make it possible to establish the existence of a number of contradictions between the existing system of training specialists and present-day social and personal needs, caused by profound changes in all spheres of social life, in particular, between:

– society's objective need to make contemporary school more humane and attractive and retaining, the authoritarian mass-education school that, basically, does not provide conditions for both students and specialists to manifest their personal creativity;
– requirements put forward by the individual and society for educational outcomes and the concept of mass-reproduction education;
– the trend towards a continuous formation of creative thought, development of creative abilities – and the narrow-area concentrated specialist training in the higher technical school;
– the liberal arts component in the professional work of the future specialist pertaining to the subject-subject interaction, and the insufficient presence of the psychological and pedagogical component in higher school training.

All the above contradictions allow to formulate the main problem of this study: what are the theoretical and methodological foundations for the development of integrative courses in the system of continuous education as the basis of the person's creativity, that provide his / her adequacy to present-day and future professional requirements?

The major hypothesis of this study assumes that a system of training the creative personality in the continuous education system can only be effective if, when being designed and implemented, the following premises are taken into account.

The chief goal in shaping an individual's creative personality in the continuous education system is to secure a level of the creative contemporary higher school graduate that corresponds to the needs of the person and dynamically changing professional activities; to train professional experts with a high level of general culture, well-developed communication skills, empathy and intuition, whose core trait is the creative orientation of his/her personality.

The main methodological approaches in designing the shaping of creativity in higher school graduates are:
– *the system and functional approach*, according to which the shaping of higher school graduates' creativity is viewed as a flexible pedagogical sub-system of the system of re-training specialists in their professional activities that takes into consideration the dynamics, trends and prospects of their development;
– *the integrative approach*, that allows, on the level of an integral component, coordination of achievement of different objectives within the framework of a single process of education; and, on the level of content and procedural components, – designing of a system of interdisciplinary knowledge and skills that would secure a high level of competence and creativity in higher school graduates;
– *the personality-oriented approach,* that is directed at the development of professionally significant personality traits in students determining the effectiveness of their creative activities.

Creativity, as a special multi-level personality category of creative pedagogy, characterized by dialectical three-dimensionality of its components (procedural, resultant and prognostic) – is a productive source of creative professional activities and the basis of professional adaptation.

The design and implementation of the process of shaping creativity in the system of professional training rely on the totality of general pedagogic and specific principles:
– greater inclusion of the humanities element, that is expressed in orienting all components of the learning process towards the development of the student's personality potential;
– succession, that allows correlation of different stages of continuous education (school – lyceum – university – professional development courses – re-training – professional refinement) and bringing them together into a system that provides the person's professional development;
– comprehensiveness, that means the completeness of information relating to major problems in special, general professional psychological and pedagogic, natural science, social and philosophic disciplines that allow variation in the process of education;
– modularity that envisages educational content structuring in module-units that provide an optimum combination of invariable and variable components of the process of education.

In order to realize the theses formulated in this study, the following objectives were established:
– to provide rationale for theoretical and methodological bases of designing integrative courses in the Higher School, proceeding from their importance for the professional activities of future specialist;
– to identify basic indicators of creativity and establish correlation between specific personality traits that have an immediate relation to creativity manifestations in future professional activities.

We find the first mention of the nature of scientific creativity in the works of ancient philosophers. Aristotle in his famous syllogistics attempted to establish the nature of generating new knowledge by building an algorithm of logical conclusions. In pre-scientific psychology new knowledge production was for a long time believed to be due to the mode of thought operations called deduction, later – it was induction, which meant a non-deterministic kind of

approach to defining the nature of creativity. A notion of the nature of creativity that in part was in line with "deterministic ideals of science" about creative synthesis and creative associations appeared in psychology only in the epoch of the reign of the association concept.

Analysis of approaches and views of philosophers, psychologists and educationalists relating to the problem of creativity allowed not only establishing the essence, mechanisms and criteria of creativity, but also identifying its applied aspects, in particular – the search for pedagogic conditions under which a successful shaping of the individual's creative personality is possible.

The first to notice this was J. Pestalozzi who understood studying as the student's own creativity – knowledge acquisition on the basis of independence and self-development. This point of view had marked a turn in didactics from the external nature of creativity to human nature itself. Furthermore, on the basis of experimental research it was established that creativity, which is an independent psychological entity, integrates itself into a range of the person's individual traits (distinctions) in the intellectual sphere, and, depending on the level of manifestation of these traits, the person projects an appropriate creative outcome phenomenologically. Even with minimum manifestations of creative abilities, under the conditions of an enriched environment of innovative education and the appropriate process of upbringing, i.e. contextualized education, - an individual can demonstrate positive dynamics in creativity: a stable tendency towards self-actualization and creative self-expression starts to emerge.

In addition, creativity characteristics are linked to a complex of psychic attributes that manifest themselves in a particular productive or professional activity. So, a number of authors [6–9] identify various abilities as elements of creativity, the basis of which, in their view, is expressed in the ability to project and generate new ideas.

We intend to consider creativity as a process and a complex of intellectual and personality traits of an individual that are instrumental in independent problem formulation, generating a large number of original ideas and non-standard approaches to tackling them, which allows studying creativity not only as a result, but also as a personality-wise meaningful new quality based on reflection and subjective self-concept.

In order to find out how future graduates of the Higher School, who study at different faculties and higher educational establishments of Ukraine, correlate their future profession with the notion of creativity and creative work, we carried out a study of the phenomenon by means of a specifically tailored questionnaire.

Responding to the question: "Do you see your future specialty as a creative one?" – 85 percent of graduate students said they believed their professional activities were indeed creative. For the sake of comparison - only 70 percent of final year lyceum and college students were in the affirmative as regards the creativity of their future profession. In response to the question: "Do you see yourself as a creative person?" – 57,7 % of higher school and 42,6 % of secondary school students said "yes".

Proceeding from the logic of our study, the creative personality, creative process and creative environment are the necessary conditions for demonstrating creativity. Creativity can be viewed as intellectual creativity and social creativity. Intellectual creativity includes the cognitive sphere, which, in turn, comprises analysis (abstraction) and synthesis (generalization); at the same time, the abilities to perform analysis and synthesis are components of general intellect. Social creativity, in its turn, includes professional creativity, one form of which is pedagogical creativity that includes the perception of intellectual values, as well as the ability to be innovative.

Therefore, it could be assumed that innovative activity is a three-level structure where the foundation (the basis) is reflection – being a person's comprehension of his/her own search and creative activities, creating and transforming activities, mutual creative work with other people.

Of great importance for a reflection on the structure of innovative activities is the consideration of relation between creativity and professionalism that has a latent contradiction: on the one hand, differentiating traits that make every profession distinct from all other professions condition a system of requirements, which, if not met, strips a person of the image of professionalism, on the other hand, the greater the complexity of knowledge, that is close to the heights of mastery, the more tangible become the signs of innovation, the aspiration to disregard the conventions, the development of products and tool-kits that are in contrast with the generally accepted ones. A trend towards innovation is clearly manifested in creative self-expression that goes beyond the ordinary. The closer the peak of achievement the creative innovator is about to conquer, the greater the number of "violations" of the conventions and of the people involved in ignoring the conventions. Productivity and success in professional activities serve as the criteria of acceptability for the "departures from the mainstream".

If development is life's strategy, then – adaptation is the tactics that allows all living to hold to a certain evolutionary framework, thus securing progress.

The most recent problem in the study of man is the problem of professional adaptation. It has recently emerged in the modern production environment where certain types of activity are highly demanding. It should be mentioned that one of the important aspects of professional adaptation is the development in the student of professionally significant qualities – because changes in them, in the process of study, can be seen as certain identified regularities that reflect the stages in the professional development of a person.

Flexibility and originality of thought can realistically be considered as factors of a person's survival in society at the present stage of its development, as necessary qualities for considering vital problems - including the problem of one's own place in real life, in the first place.

In order to establish the impact of creativity of the educational environment on the effectiveness of adaptation, we introduced a psychological diagnostic methodology – "Adaptability" [10]. The responses drawn on the question "Do you consider the educational environment in which you study as creative?" showed low appraisal of creativity in the educational socium by students of non-pedagogical higher educational establishments (45,6 %) and college and lyceum teachers (46,7 %).

By comparing the responses obtained to the questions on methodology with the results that demonstrated the level of adaptability of the human organism, as a biological and psycho-physiological system, we saw a vivid confirmation of our assumption concerning the fact that in a creative environment (if that is the perception of the individual) the process of adaptation is more efficient, it requires smaller mental exertion and takes less time.

Hence, a conclusion can be drawn that in shaping and demonstrating the creative personality, a special role is played by an environment that has "a creative charge" to it, the environment that creates a need for creative work and is supportive of creative behavior. However, in practical professional activities and in the educational socium, students' creative abilities are often suppressed by teachers and administrators, because the socium is interested in its internal stability and in a continuous reproduction of existing relationship patterns. The conclusion made is that for creativity to be shaped as a profound (personal) quality, and not only a behavioral (situational) quality, the process of education is to take place under specially designed conditions – a systemic indirect creativity shaping influence exercised through a complex of conditions of a microenvironment that must have a high degree of uncertainty and potential poly-variance (a multitude of opportunities).

At the same time, uncertainty would stimulate a search for personal reference points and vital resources, while poly-variance would provide opportunities to find them. Furthermore, the educational environment should keep samples of the teacher's creative behavior and outcomes of that behavior.

Thus, we can distinguish three directions in the study of creativity in higher school professional training: the general theoretic (methodological), epistemological and empirical (related to the use of methodological principles of research) directions. The epistemological idea concerning a possible source of activating creativity lies in the fact that a creative personality – that is constantly in extreme conditions, in a state of psychological uncertainty, surrounded by paradoxes of life and generally accepted views of problems, that experiences feelings of frustration - always exhibits flexibility and inventiveness in decision making that goes beyond stereotypes and original views of problems, which allows quick adaptation and efficient actions; that is, creativity is a holistic, dialectic and value dimension.

Since the creative approach to the problem of education does not assume meeting ready-made didactic challenges, but rather the generation, creative formulation and development of ideas, concepts and projects in the broad social aspect of life, a creative technology of education is to constitute a means of measuring the initial and major purpose of professional education; that is, the dominating function of education in relation to the student should be replaced by the servicing function.

The difference between creative technologies and conventional pedagogic technologies lies in the following.

1. The partnership of students and teachers in the process of education, the teacher playing the role of a director, manager of educational services.

2. The chief condition of conventional education is removed – the use of ready-made, systematized knowledge to be interiorized. In project-oriented education, knowledge may be non-systematic in nature, contradictory and "incorrect". The student works on his/her own project by making choices based on a multitude of knowledge, notions and concepts; the student has his/her own vision of the world.

3. Knowledge ceases to be the main element of education being replaced by information - that is data of any nature, sometimes doubtful regarding their veracity, and, as a rule, poorly matching and contradictory.

Therefore, we come to the conclusion that creativity is a complicated phenomenon of complex organization that includes, along with divergent intellectual functions, a whole galaxy of personal qualities that facilitate the emergence and development of these qualities.

In order to arrange mutual creativity of the teacher and the students in the process of education, there should be a general heuristic direction in teaching and upbringing. This direction is secured by the use of a greater number of search and transformation problem tasks in the process of education and upbringing by putting in place an atmosphere of cooperation between the teacher and the student which provides creative co-work.

In technical higher educational establishments an approach had been formed over many years under which attention was focused on technical subjects, whereas social sciences and the humanities were regarded as secondary in significance. As a result, the system of technical education in the Higher School turned into a clearly expressed standardized "techno-centric" environment, the centre of which was the objective content of technical disciplines to be interiorized. It is in this context, that the optimal model of the higher school specialist-graduate was built. Despite the progressive nature of this approach to technical education, it did not provide the intellectual and moral development of a person. No notice was made of the fact that students of technical higher educational establishments were future leaders of production and the main problems facing them would be the problems of people management, in the first place, and in the second place – those of technical decision-making. Furthermore, it should be kept in mind that narrow specialization gets obsolete as fast as equipment, scientific methods and technologies, and for higher school graduates with insufficient training in the humanities it might be difficult to adapt to different types of professional activities [11].

At the same time, one cannot but take into account the fact that technical systems, the whole of techno-structure of modern society, are part of a certain eco-social system and, accordingly, influence the natural and social environment of a person. Essentially, the very nature of engineering work is such that it encompasses many socio-economic, socio-political, moral and aesthetic problems of teamwork functioning.

An engineer is required to be able to fully rely on himself/herself, learn, be more exacting towards himself/herself, his/her career and potential. In other words, the dominant qualities to be inculcated in a future engineer during professional training are: the ability to establish contacts, communication skills, the ability to accomplish established goals, competency, creativity, organizational skills, and analytical thought. The training of such specialists is a pressing task for the technical university that is to become an educator of the intellectual aristocracy – aristocracy of talent and intellect.

The strategy of development of technical education in the third millennium, therefore, is to be guided in the direction of securing humane attitudes towards man as integral personality: towards the person's natural features (health, ability to think, ability to act); the person's social characteristics (being civic-conscious, a good family person, diligent), and towards the qualities of the person as the subject of culture (the inner world, liberty and humaneness). It is this aim that is to become a priority in the professional activities of a specialist at the technical university, because it is the one that materializes the encounter of "the teacher and the pupil" in three hypostases at the same time: Teacher (the instructor) and pupil (the student), Teacher (the university) and pupils (instructors and students), and Teacher (national and world culture, spirit) and pupils (university as a whole – instructors and students). Hence, the shaping of an intellectual at the technical university is to be a process of three components operating concurrently: special-professional, fundamental investigation and liberal education training, because the most important function of the sphere of education is the synthesis of Knowledge and Belief. It is these supreme values that are to form the foundation of mentality and personality in the socium, be the basis of purposefulness, content selection, methods and techniques of educational activities at all stages of instruction.

The defined problem can only be resolved on the basis of professional and creative training of the specialist, regarding this training as an integral process of personal and professional shaping of the specialist that creates the conditions for self-actualization in the learning-cognitive and educational activities and secures further development of personal and professional qualities that facilitate successful creative professional activity.

Furthermore, the level of development of creative potential has an impact not only on the professional activities of the future specialist, but also on the very process of his/her life, because different kinds of a

person's activities (cognitive, world outlook, working, communication and emotional) retain the person's creative essence – the tendency to search and transform. For this reason, in the situation of a single educational space a program should be put in place that integrates positive national educational programs and strategies in the context of universal human values on the basis of which mankind would be educated in the spirit of tolerance, mutual respect, dialogue of cultures and respective tolerance, open communication, belief in the rational beginning, pluralism of ideas, flexibility, and not in the spirit of forceful conflict resolution and crisis management strategies. Hence, the program "Global education: cosmic view of life", developed by the World Centre for Survival and Problems of the 21st Century under the United Nations, based on a new paradigm of education: from differentiation of knowledge to synthesis of knowledge, from reductionism to holism, which stresses the spiritual and world outlook function of modern education as an actual mechanism of inclusion of every person in the vivid and continuous process of understanding the world and one's place in it, is the corner-stone of future changes on the planet [12].

The understanding of these priorities should facilitate the formation of a modern system of technical education that includes humanistic and ethical parameters, and integrates fundamental science, special and liberal arts knowledge.

All these aspects require radical changes in the methodological framework of training the specialist in the higher technical school.

The new definition of education, as a condition for training individuals for active independent life, is linked to a more profound understanding of education: not simply as a process of imparting knowledge and skills, but as a process of a person's identification of his/her self and society, nature, space, his/her role in the preservation and beneficial transformation of the world – that is, to be a professional in the area chosen, to be a person who is able to function successfully in the ever changing world of many uncertainties, and to be a person of multi-faceted humanistic and liberal thought who is backed up by the cultural legacy of preceding generations.

Proceeding from the fact that education, as an open dynamic system, is to secure the ability to analyze change, anticipate the future, and be flexible in response, the role and goals of liberal training in the system of technical education are changing.

If we compare the main goal of technical university education with the goals of liberal arts training in the course of education, we will see that its main feature is the study of regularities in the harmony of interaction between nature and society and modern ways of making it possible to use them practically - which determines the functional nature of liberal arts training in the technical university.

Therefore, in line with the nature of the subject, liberal arts training, in the process of technical university education, has the following tactical and strategic goals:

– it reveals the essence of phenomena of interaction between nature, man and society, and studies the laws of this harmonic interaction (the tactical goal);

– it identifies and substantiates the possibility of practical use of regularities discovered (the strategic goal).

The goals and tasks formulated indicate the place of liberal arts education in technical university training – bringing together fundamental science training, the step-by-step nature of cognition, creative thought formation and the philosophic framework of the future specialist's world outlook.

Being guided by these priorities will facilitate the formation of modern philosophy of technical education, as an interdisciplinary area that includes values, liberal and ethical parameters which integrate natural science, general technical, special technical and liberal arts knowledge, and widely uses traditions of world and national culture.

Based on the role and functions of fundamental science training in modern society, ideas of promoting fundamental science and liberal arts education should serve the basis for the formation and content of the university education system, which means that fundamental science training at the classical university – should not be of narrow-area nature. Therefore, the chief element of educational process improvement at the technical university is to be the inclusion in the fundamental liberal education curricula of natural-technical disciplines, and, accordingly, of a cycle of liberal arts disciplines in the fundamental natural-technical science training. At the same time, this process should not be seen as mere mixing of the well-known subjects that already exist.

What is meant here is the creation of new generation problem-oriented integrative courses, which will require inter-disciplinary synthesis and broad systemic poly-subject vision of the teachers and students. Development of such courses, as the basis of "shaping personal integrative qualities", should become a priority in the psychological and pedagogical research of problems of higher education.

In addition, the process of university education, in our view, should include disciplines and courses, the content of which reflects the process of integration

and differentiation in modern science. This cannot be achieved without the use of cybernetics, synergy and other areas of knowledge, which emerged at the interfaces between sciences, and allow reaching the systemic level of understanding reality.

Therefore, interdisciplinary integrative courses, that carry fundamental (philosophical and methodological) knowledge forming the basis for shaping general and professional culture, should play a priority role in the content of renovated education provided by the classical university. These courses are to become the basis for university graduates' ability to adapt to new professions and specializations, as well as the theoretical basis for applied research. Thus, the basis for improvement of the content of fundamental knowledge training in the technical university, in our view, should include a number of basic, fundamental moral and aesthetic imperatives:

– values common to all mankind (standards of human conduct);

– nation-oriented values (the idea of national self-identification, national cultural tradition);

– modern world values (democracy, human rights, freedom of choice) that allow us to identify the cult of the harmoniously developed person – who is a well-educated, cultured, physically and morally healthy, socially-oriented creative personality with an active social position in the fast changing world - as the bearing support for the system of education in the technical university.

Furthermore, the above formulated principles of the creative process impose certain requirements on the organization of the process of education in the classical university, which is to provide high-quality basic knowledge and skills, envisage divergent thought development and its practical application skills that allow reassessing acquired knowledge and generating new ideas, focus attention on developing creative and professional performance. The formulated objectives are in line with the views held by the well-known psychologist B.G Afanasyev who points out that "one of the indicators of human individuality is the person's productive, creative activity, realization of all great potentialities of man's historic nature" [13].

As mentioned above, the framework of innovative education lies in the fact that it is aimed at the shaping of world outlook based on the diversity of criteria for decision-making, tolerance for dissent and moral responsibility for one's own actions, competence, and systemic intellectual activities. Primarily, this means harmony of different kinds of thought: objective, operational, theoretical, constructive-heuristic and personal world outlook. V.I. Vernadsky, in his time, raised the problem of necessity to remove boundaries that "put a wall, almost not surmounted, between people who make investigations in natural and mathematical sciences, and those who are close to historical, philosophical, psychological and philological sciences" [14]. Taking this into account, the technical university is to reorient itself towards a qualitatively new technology of education that is of multi-objective nature, i.e. towards pedagogy of cooperation and pedagogy of free upbringing; new approaches in the organization of the process of education in the Higher School: differentiated, problem-oriented, game-based, dialogue-based approaches – the ones that are based on such principles as role perspective, pedagogic interaction, cooperation and creative co-work.

Therefore, the technical university, being a holistic research and educational, scientific and technological, and socio-cultural system, presents itself as a kind of incubator of breakthrough technologies, highly-qualified specialists, science-intensive business, and production facilities of the future.

The lead in its activities is taken by research, fundamental research in the main directions of science and technology, interdisciplinary research, research into problems of the Higher School and methodology.

Based on the main functions of higher education, it is possible to formulate the main principles that may serve as the foundation of a university education system technology [15]:

– methodological reorientation from informational aspects of learning liberal arts disciplines to individual personality development;

– giving a humanities angle to fundamental science training through unraveling the cultural potential of scientific knowledge of fundamental sciences, its direction towards humanistic ideals of shaping individual personality capable of harmony with nature, the environment and him/herself;

– implementation of the principles of continuous education, considering the cognitive ability and interests at different stages of the individual's personality development;

– "workability" of education that provides activity and an individual rate of complete student interiorization of the humanities cycle courses taught.

The above principles taken as the basis of the concept of utilitarian training technology allow, when designing new education technologies, a departure from the subject-oriented system of education and embarking on the designed creative path characterized, in the first place, by the personal activity approach to study – when activity proper

(the creation of the image of the world and its understanding in the context of image creation) and individual personality (as personal responsibility for one's own actions) go to the forefront. For this reason, under the new concept of education, knowledge and skills are no longer considered to be the goals of education, but rather the means of individual personality development in an educational environment.

Based on the fact that the content characteristic of principles and requirements for the classical university graduate is enlarged by adding on new components, all this calls for a structure and content adjustment in the existing system of technical education, which presupposes the development of a new concept of liberal arts training in the technical university, the foundations of which are to include principles that would serve as the basis for shaping a highly educated, intellectually developed and moral person, not only because of the needs of the socium, but also with due regard for individual inclinations, abilities and interests, considering the person as a holistic open dynamic system.

Conclusion

1. Proceeding from the chief goal of higher education – to shape professional specialists and civic-minded creative personalities capable of global humanistic thought and acting, through creative work - we consider creativity as an integral quality that appears in the intellectual and social spheres.
2. The study outcomes allow us to achieve a conceptually new level of theoretical understanding of the problem of devising integrative courses in the system of continuous education, making for a transition from the descriptive category of "considering the creative pedagogic sphere" to the active category of "creating a creative pedagogic environment".
3. It has been proven that creativity, as a personal multi-level personality category of andragogy, is characterized by the dialectic three-dimensional nature of its components: procedural, resultant and personality; it is the productive source of the higher school graduate's creative work and the basis of effective professional adaptation.
4. Development of creativity facilitates the specialist's achievement of a high level of professionalism, personality and intellectual heights, i.e. it makes for self-actualization.

Literature

1. *Маслоу А.* Новые рубежи человеческой природы. – М.: Смысл, 1999. – 425 с.
2. *Вербицкий А*. Активные методы обучения в высшей школе: контекстный подход. – М.: Высш. шк., 1991. – 207 с.
3. *Гершунский Б.* Философия образования для XXI века. – М.: Интер Деалект +, 1997. – 694 с.
4. *Давыдов В*. Проблема развивающего обучения. – М.: Педагогика, 1988. – 240 с.
5. *Леднев В*. Непрерывное образование: структура и содержание. – М.: Высш. шк.,1990. – 224 с.
6. *Янушкевич Ф.* Технология обучения в системе высшего образования. – М.: Высш. шк.,1986. – 146 с.
7. *Габрусевич С., Зорин Г.* От деловой игры – к профессиональному творчеству. – Минск: НАН Беларуси, 1989. – 165 с.
8. *Зимняя И*. Педагогическая психология. – М.: Логос, 2000. – 380 с.
9. *Карпова Ю.* Инновации, интеллект, образование: Монография. – М.: МГУЛ, 1998. – 176 с.
10. *Морозов А*. Диагностика креативности в педагогической деятельности: Монография. – М.: ИГУМО, 2001. – 253 с.
11. *Сучасні* системи вищої освіти. Порівняння для України. – К.: Вид-во Дім "Km akademia", 1997. – 197 с.
12. *BotRin I. Elmandra M., Malitra M.* No limits to learning. – Oxford, 1999. – P. 23–38.
13. *Ананьев Б.* Человек как предмет познания. – М.:Педагогика, 1980. – 231 с.
14. *Александров Г*. Психолого-педагогические основы разработки педагогических технологий в XXI веке. – Минск: НАН Беларуси, 2000. – 165 с.
15. *Valerio Grementieri*. Innovation Technology and Higher Education. Higher Education in Europe. – 1998. – Vol. XXIII, № 2. – P. 47–53.

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Е.В. Лузік, О.М. Акмалдінова
Інтегративні курси як методологічна основа в системі неперервної освіти двадцять першого століття
Розглянуто теоретико-методологічні основи формування інтегративних курсів як цілісний процес особистісного і професійного становлення фахівця, що забезпечує умови подальшого розвитку творчої особистості. При цьому рівень розвитку творчого потенціалу позначається на всіх етапах активності особистості, зберігаючи її творчу суть – пошуково-перетворюючу спрямованість.

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Рассмотрены теоретико-методологические основы формирования интегративных курсов как целостного процесса личностного и профессионального становления специалиста, обеспечивающие условия дальнейшего развития творческой личности. При этом уровень развития творческого потенциала сказывается на всех этапах активности личности, сберегая ее творческую сущность – поисково-преобразующую направленность.