MODERN HIGHER EDUCATION IN THE CONTEXT OF EUROPEAN INTEGRATION CHALLENGES

NOWOCZESNE SZKOLNICTWO WYŻSZE W KONTEKŚCIE EUROPEJSKICH WYZWAŃ INTEGRACYJNYCH

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ACTUAL ISSUES HIGHER EDUCATION REFORM IN UKRAINE

Reforming the higher education system is one of the strategic directions of state formation in Ukraine. The main tasks for its development are defined in the National Doctrine of Development of Education and are enshrined at the legislative level by the Law of Ukraine «On Higher Education» and other official documents.

Higher education reform is driven by the need to ensure that it is responsive to the dynamic changes occurring in nature, society, and the environment; the growth of information and the rapid development of information and communication technologies. Therefore, the urgent task is to create in Ukraine a system of providing educational services based on new organizational, economic and legal principles. First, the organization of the education system is a component of the general government, which aims to ensure the development of a highly developed state of the European type. Second, education as a sphere of economic activity in its development is subject to the laws of market relations. That is why it is important to advance the education system, which should be based on a single methodological basis. Third, the importance of innovative improvement in the organization of educational services is due to the rapid change of technologies under the influence of scientific and technological progress, which is accompanied by accelerated aging of the acquired knowledge and necessitates their updating throughout life. Fourthly, Ukraine cannot be outside the processes of globalization and the trends of world development of the international labor market. Fifth, the main basis for shaping public education policy is the Constitution of Ukraine and international legal documents in the field of education. Therefore, it is necessary to ensure the organization of educational services at the state level, taking into account new requirements for specialists of the European level. This suggests that reforming higher education in Ukraine is relevant both theoretically and practically.

Today, the main strategic tasks of reforming higher education at the national level are to improve the education management system, improve the quality of competitiveness, accessibility, and efficiency of its financing. The implementation of these tasks involves a flexible step-by-step system for training specialists; raising Ukraine's higher education to the international level and integrating it into the European educational space.

The adoption of the new wording of the Law of Ukraine «On Higher Education» was the formal beginning of the reform and modernization of the national higher education institution.

1. Funding for higher education. One of the main innovations of the reform in higher education was the change in approach to funding higher education institutions. Expected result – increased competition for resources. More funds are universities, which are applicants with high scores, which is more the student body, high levels of popularity of master's degree programs.

The current Law of Ukraine «On higher education» provides for the financing of the WMD from multiple sources. First, at the expense of the state budget and other sources not prohibited by the legislation. As you can see, not too generous state funding of higher education and scientific research. Second, by providing paid services to physical and legal entities, as the main statutory activity, while ensuring an adequate level of quality of these services. Real additional services, usually do not have much demand due to the depletion companies. An important criterion was the number of publications of scientific works of teachers in the international scientometric databases. Accordingly, the increased number of «requests» to teachers in terms of publications, the cost of which is often more than the monthly salary of the teacher. The overall result of the «reform» can be defined as the intensification of educational-scientific and bureaucratic burden on teachers and a rapid decline in the real level requirements of students ' knowledge.

2. Guaranteeing the proper quality of higher education. A state that is reforming higher education and seeking to provide it with a new level of quality should, first of all, make a start from the available quality indicators and invest in improving it. Direct quality indicators include the level of corruption, the assessment of quality by students, graduates, and employers. An important indirect indicator is the rapid increase in the number of school leavers going to study abroad. It should be noted that the current policy of the governments of the Eastern European and Baltic countries is aimed at attracting Ukrainian youth to their universities. So empty university classrooms, loss of intellectual capacity and workforce are already feeling like reality.

3. Expansion of autonomous academic rights of higher education institutions. Academic autonomy is one of the values necessary for the successful implementation of higher education institutions»by the institutional mission of concentrating and enhancing the intellectual capacity of society. Communication from the World Conference on Higher Education – 2009: «The New Dynamics of Higher Education and Science for Social Change and Development» (UNESCO, Paris, July 5-8, 2009) explicitly states that "»autonomy is a necessary requirement for the implementation of institutional missions through quality, responsibility, efficiency, transparency and social responsibility.

Educational institutions are able to solve most of the issues independently without seeking permission from the Ministry of Education and Science of Ukraine. They also have the independent right to open deposit accounts with banks and place their special funds in them. All ZVO will be entitled to the final award of scientific degrees (in the National Agency there is a question of accreditation of special councils and consideration of appeals for their decisions). As before, the dissertations will be defended in special councils whose control over the formation of the

composition will be exercised by NOW, but the decision on awarding scientific degrees will already be made by the educational institution itself.

4. Providing access to higher education. The essence of the reform is to create conditions for equal access of persons to higher education in accordance with the requirements of the Constitution of Ukraine. Since the introduction of ZNO as a mandatory requirement for admission to undergraduate programs, the admission process has been almost eliminated from the corruption component. Experiment on entry into the magistracy based on the results of EIT has been implemented. Out-of-competition admission and targeted order canceled, which put entrants in a level playing field. Partially implemented is the targeting of the state order (the principle of «place goes after the entrant») and so on.

5. The importance of the development of science in universities. The traditionally underestimated field of work of higher education institutions is the development of science. This is despite the fact that without it there is no quality higher education. To support science at universities, basic research funding has been introduced over the last three years, a network of centers for the use of modern scientific equipment has been developed, grant programs have been expanded, and all HEAs already have free access to Scopus and Web of Science science bases. And these opportunities must be further developed.

Therefore, the systemic problems that are largely ignored in today's higher education reforms are:

- plagiarism epidemic;
- the impossibility of ensuring a consistently high quality of education for all students of each HE due to its mass;
- Corruption of individual units of higher education;
- extremely low wages for scientific and pedagogical staff.

Thus, at present, significant reforms have been introduced in Ukraine in the system of education and higher education, including, among others, Ukraine's accession to the Bologna system, consolidation of two-tier education, ECTS credit transfer system, EIT, adoption of the Law of Ukraine «On Higher Education» etc. Right now, it is very important to bring Ukrainian education closer to international standards, to provide it with real and effective theoretical and practical developments, to optimize structure, to provide high quality personnel.

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Cognitive-style characteristics of a personality in the context of his/her intellectual and educational activities

Introduction

The increase in knowledge acquires an avalanche nature which leads to the information "explosion" in the public consciousness of a man. Under the condition of the rapid development of information technology, the widespread use of individual capabilities is required from the younger generation. In spite of the fact that a person possesses practically unlimited studying possibilities, it sets complicated tasks for choosing the strategies of their development in the educational system, creates a problem of the creative potential development. Educational activity of an individual is characterized by great individual differences. These differences are to a certain extent determined by the peculiarities of the perception and processing information by the individual.

Both biological and psychological factors are known to be determined by the ways a person perceives and processes information. Studying cognitive styles enables to explore the mechanisms responsible for managing intellectual activity. They are asserted to be manifested in methods of perception, categorization, evaluation and interpretation of reality, the mechanisms of implementation of cognitive strategies inherent in personality. Cognitive styles control the information processing and are the psychological basis of regulatory effects in the intelligence functioning.

A significant contribution to the development of ideas about the nature and peculiarities of cognitive styles has been made thanks to the theories of the psychological differentiation of H. Witkin, the cognitive controls of R. Gardner, J. Klein, P. Holtzmann, H. Schlesinger, the cognitive pace of J. Kahan, conceptual systems of D. Hunt, O. Harvey, H. Schroeder, personal constructs of J. Kelly.

The research of the relationship between the parameters of the cognitive style and the mental activity of the person has received much attention from A. R. Hilpin, D. Kahan, N. Kohan, V.D. Frokhlikh as well as V.M. Allahverdov, M.O. Kholodna, I.P. Shkuratova; relationship between cognitive styles and educational styles, high

learning level – V.V. Andriievska, O.B Naprasna, N.O. Mykhalchuk, O.V. Rudykhina, O.S. Shemelina, H. Klaus, V.A Kolha, R. Mayer, L. Masa; relation of cognitive styles and approaches to decision making – N.V. Semichova; the scholars V.V. Protasova and A.O. Tsykun examined the cognitive and style aspects of the thought problem solving; the influence of cognitive style on social perception was investigated by A.A. Studenikin.

Cognitive styles represent relatively stable individual differences in the dominant ways of organizing and processing information, experience that is determined by the personal and cognitive characteristics of individuality. These are not simple habits, they are developed slowly and empirically, and do not tend to be modified easily through special training.

1. The nature of cognitive style

The analysis of the basic approaches to the study of abilities testifies that intellectual activity is an extremely complex phenomenon and it is not possible to describe its laws in the framework of general psychology. Psychological theories of intelligence, developed within the framework of general psychology, were focused on the identification and formulation of general patterns of cognitive psychological activity[1] [68, p. 9]. At the same time, individual differences in intellectual activity were ignored, namely: individual specificity of processing information; originality of methods for solving tasks that are specific to a particular person.

Theories of intelligence have faced a strange phenomenon, individual intellectual behavior is often unpredictable in terms of the laws of general psychology. The researcher of intelligence M.O. Kholodna has put forward the statement "general laws are an artifact in relation to the peculiarities of the individual mind of the subject – and to a greater extent, the higher the level of human mental development".

The concepts and approaches that allowed to describe the mechanisms of the individual specificity of mental activity, have always enjoyed special respect in the scientific community, therefore, with the advent of the concept "style" the hope for deepening knowledge about the nature of human intelligence has grown.

Concerns have arisen due to the analysis of the definitions of the cognitive style (CS), therefore, a number of its salient characteristic features have been distinguished, namely:

1. this is a characteristic of the cognitive sphere which indicates the peculiarities of its organization;
2. these are individually peculiar ways of obtaining one or another cognitive product, that is, an instrumental characteristic of intellectual activity;
3. it is a bipolar dimension, which means that each cognitive style is described within two extreme forms of intellectual behavior;
4. it is a stable characteristic of the subject, which is constantly manifested at different levels of intellectual activity and in different situations;
5. prioritization of a certain way of the intellectual behavior;

[1] М.А. Холодна Психология интеллекта: Парадоксы исследования / 2-е изд., перераб. и доп. Санкт-Петербург.: Питер, 2002. С.9

6. appraisal judgments are not applied to the CS, since representatives of one or another field of a particular CS have certain advantages in situations where their individual cognitive qualities contribute to the effective adaptation[2].

On the one hand, cognitive and style characteristics are individual differences in the way the information is perceived, methods of analysis, structuring and evaluating their environment, developing some typical forms of intellectual behavior, according to which groups of people are similar and at the same time different from other people. On the other hand, the highlight of these or other cognitive styles testifies the presence of certain unique individually specific mechanisms for regulating his/her intellectual activity "inside" the individual's experience.

The phenomenon of cognitive styles (CS) was determined on the basis of a number of significant aspects, namely:

the individual differences in intellectual activity, referred to as cognitive styles, were distinguished from individual differences in the degree of success of intellectual activity determined by means of psychometric tests of intelligence;

the CS were seen as a characteristic of the cognitive sphere and, at the same time, a manifestation of the personal organization as a whole, since they were in close connection with the needs, motives and affections;

the CS were interpreted in comparison with the individual features of cognitive processes as a form of intellectual activity of a higher level, since their main function was not only to obtain and process information about external influences but also in the coordination and regulation of basic cognitive processes;

A special status of stylistic characteristics of intellectual activity was given due to their special role in the regulation of individual behavior. In the theory of cognitive styles, the emphasis was put on the problem of individuality (uniqueness) of the human mind in the form of recognizing the existing individually peculiar ways of organizing cognitive contact with the world by each individual[3].

There was such an attempt to assume that the study of cognitive styles would enable to explain the extraordinary effect in the work of intelligence: there is a strange combination at the higher levels of intellectual activity, on the one hand, the growing ability to an increasingly objective form of reality reflection (it is the ability to acquire general objective laws of the universe in its boundary form), and, on the other hand – the strengthening of the individualization of intellectual activity. O.P. Pisotskyi notes that cognitive style is an important psychological mechanism that relates to the internal reserves of the individual and is able to substantially optimize the interaction of a man with the environment[4].

A well-known researcher M. Polani argued that scientific knowledge, which meets the criteria of completeness, reproducibility, formulation, is impossible without

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[2] М.А. Холодна Психология интеллекта: Парадоксы исследования / 2-е изд., перераб. и доп. Санкт-Петербург.: Питер, 2002. С. 40

[3] М.А. Холодна Когнитивные стили. О природе индивидуального ума., 2-е изд.СПб.: Питер, 2004. С. 41

[4] О.П. Пісоцький Основні напрямки досліджень когнітивного стилю особистості у психології // Актуальні проблеми психології : зб. наук. праць / Ін-т психології ім. Г. С. Костюка АПН України., Київ: А. С. К., 2009. С.183-189.

referencing to deeply individualized personal meanings[5]. In his opinion, there are always two types of knowledge: explicit and implicit in the structure of scientific cognitive activity. Explicit knowledge is present in the form of concepts and theories, implicit is interpreted as "personal knowledge", which is being gradually accumulated through the personal experience of a scientist, due to his/her passions and beliefs, and can not be expressed in generally accepted forms of communication (in oral or written language modes)[6]. The role of "personal knowledge" grows at the stages of scientific creativity, when the birth of new ideas occurs on the basis of the destruction of the traditional system of scientific concepts.

In the course of scientific thought development concerning the nature of the CS, two schools of researchers have been formed: Gestalt psychological direction which is presented by H. Witkin, D. Gudnau and others [7]; Psychoanalytic direction presented by J. Klein, F. Holtsman, R. Gardner, etc. [8].

The researches of geshtalpsychological direction assume that most of the parameters of the cognitive style are grouped due to the analytical-synthetic measurement, reflecting the degree of accurate perception of the environment. The leading representative of this school H. Witkin differentited the field dependence and field independence KS. Since then, the theoretical concepts of this parameter have been expanded, detailed, and formed the concept of "psychological differentiation". The essence of this concept is as follows: there are constant individual differences in the degree of articulation of the surrounding world and a person himself. More articulated perception means both greater accuracy and better organization of the perceptive field. Articulation, according to the authors' of this direction viewpoint, is a fundamental personality characteristic that permeates various levels of its organization, but "special training and life experience in the process of maturation can have a various impact on the differentiation of the person's individual spheres, and the differentiation during later stages of life or mental disorders can reduce the level of differentiation in these areas" [9].

Instead, the representatives of the psychoanalytic direction in their research consider the cognitive style as "... a mutually ordered system of cognitive attitudes that creates a special structural level of personality" [10]. Cognitive attitudes are understood as mediated structures that acquire their form "from motives, constitutional characteristics and adaptive problems an individual faces" [11]. Cognitive attitudes have the status of intermediate variables between needs and behavior,

[5] М. Полани Личностное знание. На пути в посткритической философии. Москва: Наука, 1985.
[6]Там само.
[7] H. Witkin, D. Goodenough Cognitive style: Essence and Origins, N.Y., 1982. 135p.
[8] Gardner R.W., Holzman P.S., Klein G.S., Linton H.B., Spence D.B. Cognitive control. A study of individual consistencies in cognitive behavior., Psychological Issues. Momograph 4. V. 1. N.Y., 1959.
[9] Witkin H.A. Individual differences in ease of perception of embedded figures. *J. Of Personality*, V.19., 1950. P.1-15.
[10] Kelly G. Abrief introduction to personal constructs theory. *Perspectives in Personal Construct Theory*, N.Y., 1970. P.26.
[11]Ibid. P.202

"simulating, promoting or suppressing the effect of a temporary need for behavior" [12] and defining the rules under which cognitive processes undergo.

They are entities selected by the individual depending on the intentions and goals of an action in a particular situation. Formation of an individual cognitive style, thus, is not just a set of different cognitive attitudes, but "... an increase in adaptive quality, which grows as a result of the constant use of various cognitive attitudes" [13].

Summarizing the study of the individual intelligence functioning peculiarities, M.O. Kholodna defines the place of cognitive style as a structure of mental experience. The word "structure" comes from Latin "struere", which means "to be built". The researcher describes the mental structures as peculiar psychic mechanisms, in which the available intellectual resources of the subject are presented in the "folded form", and which, in the collision with any external influence, can "unfold" the mental space that will be organized in a special way. Relying on the analysis of mental structures, three levels of experience were identified. Each of them has its own purpose, performs specific functions.

1. Cognitive experience is the mental structures responsible for preserving, organizing and transforming the existing and the new (the incoming) information and, thus, contribute to the reproduction of sustainable, regular aspects of the environment in the psyche of the subject.

2. Metacognitive experience is the mental structures that provide involuntary and arbitrary regulation of intellectual activity. Their main purpose is to control the state of individual intellectual resources, as well as the information processing.

3. Intentional experience is the mental structures that are the core individual intellectual inclinations. Their application is the formation of subjective criteria of choice in relation to a certain subject area, the direction of finding a solution, sources of information and ways of its processing [14].

Features of organizing mental structures at these levels of experience determine the properties of individual intelligence.

The evidence of this statement is the findings of Flavell (1976), Brown (1978), Borkowski, Peck, Reid (1983), Forrest-Pressley et al (1985) who claim that there are metacognitive processes that control the course of intellectual activity among such processes as perception, memory and thinking [15] (quoted by: Belyi, 1992).

As a part of the stylistic approach, many empirical data were gathered. This material was based on an alternative view of the nature of intellectual differences. Innovations in the cognitive-style approach have ignited many discussions and the need to find out contradictions. The following contradictions are of the great interest:

1. Since the cognitive sphere functions as a single system, how are different cognitive styles interconnected as its structural components?

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[12]Kelly G. Abrief introduction to personal constructs theory. *Perspectives in Personal Construct Theory*, N.Y., 1970. P. 203

[13]Ibid. P. 226

[14] Холодная М.А. Психология интеллекта: Парадоксы исследования, 2-е изд., перераб. и доп. СПб.: Питер, 2002. С. 109-110.

[15] Белый Б.И. Тест Роршаха. Практика и теория / Под ред. Л.Н.Собчик, СПб, “Дорваль”, 1992 г. 200с.

2. If cognitive styles are ways to process information, can such individual differences be neutral in terms of the effectiveness of intellectual functioning and the overall level of mental development of personality?

The general feature of the above mentioned theoretical concepts is that cognitive-stylistic peculiarities are perceived by all authors as personal entities that exhibit significant generalization, statistically significant relationships not only with intellectual abilities, but also behavioral characteristics in various spheres of activity are researched. A lot of empirical data concerning the relationship of CS characteristics and intellectual productivity, learning activities are collected.

2. Cognitive styles and their links with the characteristics of practical intellectual activity of the individual

Intellectual behavior, which in the embryonic forms is already manifested in animals, becomes one of the main forms of conscious activity in humans. Intellectual behavior (IB) of a person is a product of long-term development and has a very complex psychological structure. O.R. Luriia considered the structure of the intellectual act in those forms that are closest to the acts of visual analysis and synthesis of information a person receives directly from the surrounding world. S. Munoz attributed the following processes/actions: define, classify, interpret, create own ideas or plans, evade to the main characteristics of the IB[16].

Let's try to find out what influence on the repertoire of the person's intellectual behavior the parameters of cognitive styles have.

Profound empirical material obtained in studies of cognitive-stylistic characteristics of such authors as H. Witkin, T. Globerson, V.A. Kolh, C. Ch.S. Nosal, O.J. Harvey, M.O. Kholodna, I.P. Shkuratova enables us to carry out this kind of analysis.

Let's consider the empirically detected bonds of fields of the cognitive styles with the productive characteristics of the intellectual behavior of the features by the example of field dependence/field independence, narrow/wide range of equivalence, rigorous/flexible cognitive control, impulsivity/reflexivity, accurate/abstract conceptualization.

Field dependence/field independence (FD/FI).

When factorizing the results of the perceptual test and spatial orientation that diagnose the FD/FI, they turned out to form a single factor, along with the sub-tests "Cubics", "Compilation of figures" and "Missing details" the Wechsler scale. These data, according to H. Whitkin, indicate the existence of a general cognitive style, which was called the analytical approach to the field (or analytical abilities).

If an individual shows the ability to divide the field into elements, organize and structure the situation, then he/she demonstrates the articulated approach to the field. If, on the contrary, the individual follows the field as a given without any serious attempts to reorganize it, hence, he/she uses a global approach to the field.

[16] Munoz S. Intelligent behaviors. Thought and Ideas. // slideshare.net / Discover. Share. Present. 2013. URL: http://www.slideshare.net/smtteach/intelligent-behaviors (дата звернення: 21.03.2013)

Analyzing the nature of the individual differences in the severity of FD/FI, T. Globerson correlated them with the emergence of control strategies responsible for inhibiting the influence of the visible field[17]. Ch.S. Nosal explained these differences by the peculiarities of memory and attention formation. The main reasons for a style are in relation with a small volume and the pace of simultaneous processing of information and inertness of attention[18].

As far as field independence is concerned, M.O. Kholodna correlates it with such indicators of the intellectual sphere as: high non-verbal intelligence, flexibility of information resources, higher productivity of the learning process, successful problem solving, which in content corresponds to the factor of "adaptive flexibility" by D. Guilford; ease of installation change.

Researcher I.P. Shkuratova also conducted a series of studies on the relationship between field independence and intelligence. "Field dependence/field independence" were measured by using the test K. U. Ettrich on general creativity "AKT-70", the level of intelligence with the help of Wechsler's tests. The following results were obtained: significant connections with the level of intelligence gave only the number of correct answers and overall performance, the time of the tests was not associated with it. This fact confirms the opinion of K.M. Hurevych that the most reliable indicator of the level of intelligence is quality, not the speed, since the latter also depends on temperament and other personality traits[19]. Furthermore, an interesting fact is that a tight correlation between the field dependence and verbal intelligence was established.

In addition, in terms of children studies, the field indedependent ones are engaged in better structuring the spots of Rorschach, giving more responses of type W, holistic interpretations, which are mainly interpreted as an indicator of the subject's intellectual capabilities[20].

The analysis of data obtained by the researchers as for the relationship between field dependent / field independent with intellectual abilities allowed them to be presented in Table 2.1 to compare different fields of this style.

According to the results of the analysis, we can suppose that individuals with a vivid FI:

- show higher level of verbal and nonverbal intelligence;
- they have an analytical approach to the perceptual field;
- they tend to possess higher indicators of adaptive flexibility (by Guilford);
- more often give a holistic interpretation of the spots of Rorschach, which may indicate higher intellectual capabilities.

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[17] Globerson T. Mental capacity, mental effort and cognitive style. *Developmental review*, V.3, 1983. P.431-438.

[18] Nosal Ch.S. Psychologiczne modele umysly, Warszawa: Panstwowe Wydawnictwo Naukowe, 1990.

[19] Гуревич К.М. Тесты интеллекта в психологии. *Вопр. Психологии*, 1980. № 2. С.51-64.

[20] Witkin H.A., Dyk R.B., Faterson H.F., Goodenough D.R., Karp S. Psychological differentiation, Potomak, 1974. P.69

Table 2.1

Links FD/DI with characteristics of intellectual activity

Field independent	Field dependent
field analytical approach	field synthetic approach
higher learning performance	small amount and pace of information processing
higher adaptive Guilford test flexibility	inertness of attention
higher nonverbal intelligence	–
higher indicator of verbal intelligence	–
more answers of type W (integral) according to the Rorschach test	–

All revealed interdependencies show that the increase of field independence is associated with higher indicators of intellectual competence or cognitive maturity.

These data allow us to refer to Rapoport's assumption that at higher levels of psychological differentiation (FI) there are less distortions in perception, and therefore higher adaptive capabilities of the individual are observed.

Narrow/wide range of equivalence. The essence of this cognitive style is that few or myriad categories are represented in the individual conceptual experience.

The works of R. Gardner and co-authors highlight that the narrow range of equivalence correlates with the following characteristics of intellectual activity: the proximity of verbal associations to the word-stimulus; literacy of reproduction and less originality in the Thematic Apperception Test (TAT), the tendency of approximation of marks to some average value, the tendency to offer homogeneous answers during the Guildford test of "Methods of using objects", that is, a low level of creativity[21].

V. Kolha declares that adolescents possess the narrow range of equivalence ("analyticity") correlates with lower rates of involuntary and arbitrary memorization, cognitive rigor (high interference score by the method of Stroop), low rate of perception of geometric shapes classification criteria and low educational achievement[22]. This cognitive style characterizes the degree of subjective difficulty in changing the ways of processing information in a situation of cognitive conflict. According to the scientist, a wide range of equivalence ("synthetism") contributes to the expression of curiosity, the ability to use more generalized conceptual structures (less differentiated evaluation scales), while "analyticity" fosters accuracy (strict subjective evaluation criteria).

[21] Gardner R.W. Shoen R.A. Differentiation and abstraction in concept formaition. *Thought and Personality*, Ed. By P.D. Warr. Baltimor, 1970. P.23

[22] Колга В.А. Дифференциально-психологическое исследование когнитивного стиля и обучаемости. Дис.на соиск. уч. степ. канд. псих. наук, Ленинград:ЛГУ, 1976

Comparison of the indicators of conceptual differentiation and intelligence revealed almost complete absence of a connection between them, which is evidence of greater autonomy of this parameter of cognitive style from the level of intelligence. There is a tendency toward the inverse relationship between conceptual differentiation and verbal intelligence, that is, the more the narrow range of equivalence appears, the lower the levels of verbal intelligence will be displayed.

The indirect link between them can be assumed to be the ability to generalize, which is the basis of verbal intelligence. L.S. Vyhotskyi states that "words always refer not only to a single object, but to an entire group or to a whole class of objects. Because of this, each word represents a hidden generalization"[23]. However, R. Gardner and R. Schoen believed that conceptual differentiation was not a direct expression of the ability to generalize and was not associated with the ability to abstraction[24]. Since conceptual differentiation is a stylistic characteristic of an individual, it can not be completely independent of such a global characteristic as intelligence.

The relations of the parameters of the CS "narrow-wide range of equivalence" with the characteristics of intellectual activity are presented in Table 2.2.

Table 2.2

CS relations "narrow-wide range of equivalence" with characteristics of intellectual activity

Narrow range	**Wide range**
many groups are formed and they are not numerous	few groups are formed and they are numerous
the closeness of word-association to the word-stimulus	the proximity of words-associations to the stimulus word
literacy of reproduction and less originality of stories (TAT test)	something can be invented and more original stories (TAT test)
low rates of involuntary and arbitrary attention	high rates of involuntary and arbitrary attention
rigorous cognitive control	flexible cognitive control
low rate of perception of geometric figures classification criteria	high rate of perception of geometric figures classification criteria
precise, strict subjective evaluation criteria	less differentiated evaluation scales
–	not a direct expression of the ability to generalize
–	not associated with the ability to abstract

[23] Выготский Л.С. Мышление и речь *Избранные психологические исследования*, М., 1956. С.49.

[24] Gardner R.W. Shoen R.A. Differentiation and abstraction in concept formaitionю *Thought and Personality*, Ed. By P.D. Warr. Baltimor, 1970.

The analysis shows that the "narrow range of equivalence" is peculiar to a person who is very specific in thinking, neither very attentive nor flexible in methods of perception, slowly learns, in contrast to the person with the opposite field (Table 2.2). Hence, individuals with a prevailing "wide range of equivalence" have better conditions for functioning at the higher intellectual level.

Rigorous/Flexible Cognitive Control

Rigorous control indicates difficulty in transition from verbal functions to sensory-perceptual ones due to their low degree of automation, while the flexible control shows the relative ease of such transition due to the high degree of their automation[25].

Low interference (flexible cognitive control) demonstrates the ability to inhibit verbal functions that are stronger in nature for the sake of color perception, high interference means that it is difficult to get rid of the influence of the meaning of the word when it is inconsistent with the observed impression.

In the report of A. Jensen, W. Rover, the results of the research illustrate that the individuals with low interference (according to the method of the Stroop) better perform simple arithmetic operations in case of obstacles, have higher learning achievements; show the ability to combine the contradictory elements of the perceived situation; are distinguished by higher indices of field independence[26].

While examining young people, the rigidity field was found to correlate with low performance indicators of arbitrary and involuntary memorization, as well as low academic performance[27]. Individuals with rigorous control show less reading speed; they are less exposed to be disturbed[28].

Analyzing the nature of this style and the empirically established interrelations with other psychological variables, M.O. Kholodna suggests that "this cognitive style has a direct relation to the mechanisms of the integration of verbal-linguistic and sensory-perceptual forms of experience, as well as the processes of arbitrary and involuntary regulation of cognitive activity in the conditions of their conflict"[29]. This conclusion gives us reasons to assume that the test "Discover your intellectual strengths" (it is required to "read" drawings, that is, translate the language of symbols into the word-concepts) can be applied to study the flexibility of transcoding information, the ease of transition from the sign-verbal to the spatial styles of information coding and might be an additional tool for the diagnosis and development of rigorous/flexibility of cognitive control.

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[25] Gardner R.W., Jakson D.N., Messick S.J. Personalyity organization in cognitive control and intellectual abilities. Psychological Issues. Monograph 8. V.2. №4, 1960

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[29] Холодна М.А. Когнитивные стили. О природе индивидуального ума., 2-е изд. СПб.: Питер, 2004. P. 71

Impulsiveness/Reflexivity

This cognitive style, according to the assumption of Jerome Kagan, characterizes the individual personality differences in the tendency to make decisions quickly or slowly. Impulsive subjects under study are inclined to respond quickly in a situation of multiple choice, the hypotheses are being put forward without analyzing any possible alternatives. Reflexive individuals are characterized by slowed-down pace of response in a similar situation, the hypotheses are checked and refined several times.

The study results of this cognitive style outline that impulsivity/reflectivity acts as an indirect measure of the ratio of orientation, control and executive phases in the structure of intellectual activity. The main difference between impulsive and reflective in the volume of information that an individual collects for making a decision: impulsive individuals make decisions on a partial information basis, whereas reflexive ones tend to make decisions taking into account the fullest possible information about the situation.

Consequently, the main difference between impulsive and reflective act is in the volume of the information that the individual collects and the speed of his/her interpritation to make a decision.

The type of temperament, the teaching methods, the cognitive style of subjective perception of time are capable of influencing the severity of the reflexive or impulsive field.

Concrete/abstract conceptualization

There are such psychological processes as differentiation and integration of concepts in the core of specificity/abstraction. The field of "concrete conceptualization" is characterized by a slight differentiation and lack of conceptual integration.

The following psychological qualities are typical for "specific" individuals: the propensity to black-and-white thinking, intolerance to uncertainty, stereotyped solutions, and less ability to think in terms of hypothetical situations. The field of "abstract conceptualization" involves high differentiation, as well as high integration of concepts. Accordingly, "abstract" individuals are characterized by freedom from the immediate properties of the situation, independence, flexibility, and creativity[30].

In the process of ontogenetic development there is an increase in the abstraction of the individual conceptual scheme, which is caused by the growth of the number of alternative schemes for the perception and analysis of the same object, a deviation from the standard evaluations due to the increasing ability to internal transformations and combinations of concepts.

The scholars O. Harvey, D. Hunt, G. Schroeder declared that the field of "abstraction" correlates with high verbal intelligence (on the Wechsler Scale), a low level of dogmatism and authoritarianism, greater success in solving problems in coining concepts (according to Bruner's methodology), as well as high levels of creativity[31].

[30] Harvey O.J., Hunt D.E., Schroder H.M. Conceptual system and personality organization, N.Y.: John Wiley, Inc., 1961.
[31] Ibid.

The concrete way of conceptualization determines the blockage (limitation) of the mind in the form of a tendency to excessive simplification of understanding the situation and excessive concentration on one approach to its interpretation. Whereas the abstract way of conceptualization characterizes openness of mind, which is manifested through certain contingencies, the creation of alternative interpretive schemes, tolerance to unusual and new aspects of reality[32].

This stylistic feature combines two aspects of human interaction with their environment: the complexity of behavior and environment. If the parameters of the environment go beyond the limits of some threshold of complexity, then "specific" individuals are incapacitated because their behavioral repertoire is poor and not designed to interact with some complex social environment.

Table 2.3 shows the established relationships between the parameters of this CS and the productive characteristics of intellectual activity.

Table 2.3

Relationship of the parameters of the CS "concrete-abstract conceptualization" with the characteristics of intellectual activity

Concret conceptualization	**Abstract conceptualization**
black and white thinking	the ability to think in terms of a hypothetical situation
intolerance for uncertainty	independence
stereotyped solutions	flexibility in solutions
excessive simplification of the situation understanding	creativity
low differentiation and integration of concepts	high differentiation and integration of concepts
concentration on one approach	innate ability to internal transformations and combinations of concepts
low verbal intelligence	high indicators of verbal intelligence
high level of dogmatism	низький рівень догматизму, авторитарності low level of dogmatism, authoritarianism
-	successful solution to the problems regarding concepts formation

Fig.2.1 Links of FD/FI with other cognitive styles

The meta-analytic review of the CS studies can show that there is a relationship between the FD/FI style with other CS (Fig. 2.1).

There are interconnections between FI with such fields of cognitive styles as "a wide range of equivalence" and "flexible cognitive control", as well as an indirect

[32] Холодна М.А. Когнитивные стили. О природе индивидуального ума., 2-е изд. СПб.: Питер, 2004. P. 85

connection with "abstract conceptualization" due to the high level of verbal intelligence; while such interrelations with the following cognitive styles as the "type of reaction", "leveling/aggravation", "focus/scanning control", "cognitive simplicity/complexity", "tolerance/intolerance to unrealistic experience" are not researched (Figure 2.1).

As a part of the discussion on the nature of the relationship of cognitive styles, there is, partly, a confirmation of the assumption that there is some unified cognitive basis ("meta-measure") of the ways of processing information, namely more complex-simpler (higher-lower level of psychological functioning), in relation to which the CS act as its partial manifestations.

Conclusions

The development of the theory of cognitive styles has opened new frontiers for new approaches to the study of the problems of the human mind uniqueness and the individual differences in intellectual activity. With the advent of the concept of "style", there is a possibility to deepen the knowledge about the nature of intelligence.

Cognitive-style characteristics appear to be individual differences in the methods of perception of information, techniques of analysis, structuring and evaluating the environment, shaping some typical forms of intellectual behavior. The severity of these or other cognitive styles indicates the existence of the individual and specific mechanisms of intellectual activity regulation in the individual's experience.

The theory of cognitive styles embraces the existence of individually peculiar ways of organizing cognitive contact with the world.

The analysis of the empirically detected connections between cognitive style fields and the productive characteristics of intellectual behavior of a person allowed to reveal the unevenness of these relationships, the advantages of one field among others in terms of ensuring the complexity of intellectual functioning.

The assumption is made grounding on the meta-analysis of the cognitive styles study results. A single cognitive basis ("meta-measure") of the methods of information processing is to be detected, that is the lower-higher level of psychological functioning, in relation to which the CS act as partial manifestations.

Abstract

The educational activity of an individual is characterized by individual differences. These differences, to a certain extent, are determined by the peculiarities of perception and processing information by a person. Studies of cognitive styles are particularly relevant in the context of this problem, as they are manifested in methods of perception, categorization, evaluation and interpretation of the reality, the mechanisms of implementing cognitive strategies that are peculiar to an individual. Cognitive styles carry out the organization, control over the information processing and are the psychological basis of the regulatory effects in the intelligence functioning.

As a result of studying the nature of cognitive styles, six distinctive features of stylistic characteristics have been identified. The CS were observed as a characteristic of the cognitive sphere and, at the same time, as a manifestation of the personal

organization as a whole, since they appeared to be in close connection with the needs, motives and affections.

In the course of developing scientific thought on the nature of the CS, two schools of researchers have been formed: the gestalt psychological direction (the concept of "psychological differentiation"), the psychoanalytic direction (the concept of "cognitive attitudes"). On the basis of groundbreaking studies of intelligence and cognitive styles M.O. Kholodna defines the place of cognitive style as a structure of mental experience.

The work analyzes the influence of the parameters of cognitive styles on the repertoire and the productivity of intellectual behavior of the individual. The strengthening of some certain fields of cognitive styles, namely, field independence, abstract conceptualization, reflexivity, a wide range of equivalence, the flexibility of cognitive control is found to be associated with higher indicators of intellectual competence or cognitive maturity.

An assumption is partly confirmed that there is a single cognitive basis method ("meta-measure") for processing information (higher-lower level of psychological functioning), in relation to which the CS act as partial manifestations.

Streszczenie

Działalność edukacyjna jednostki charakteryzuje się indywidualnymi odmiennościami. Odmienności te są do pewnego stopnia uzależnione od specyfiki percepcji i przetwarzania informacji przez jednostkę. Badania stylów poznawczych są szczególnie aktualne w kontekście przedstawionej problematyki, ponieważ określają sposoby postrzegania, kategoryzowania, oceny oraz interpretacji rzeczywistości, mechanizmów wdrażania strategii poznawczych, które są nieodłącznie związane z osobowością. Style poznawcze kontrolują przetwarzanie informacji i stanowią psychologiczną podstawę efektów regulacyjnych w funkcjonowaniu inteligencji. Wynikiem badania natury stylów poznawczych był odbiór sześć charakternych cech stylów poznawczych. SP były postrzegany jako cecha sfery poznawczej, a jednocześnie jako przejaw organizacji osobistej w całości, ponieważ były one okazewane w ścisłym związku z potrzebami, motywami i afektami. W teorii stylów poznawczych akcent przeniosł się na problem indywidualności umysłu ludzkiego w postaci uznania istnienia indywidualno – swoistych sposobów organizowania kontaktu poznawczego ze światem.

W procesie rozwijania myśli naukowej o naturze SP wyraźnie utworzyły się dwie szkoły badaczy: kierunek gestalt w psychologii (koncepcja „dyferencjacji psychologicznej”), kierunek psychoanalityczny (koncepcja „ postawa poznawcza”).

Na podstawie szczegółowych badań inteligencji i stylów poznawczych. M O Chołodnaja definiuje miejsce stylu poznawczego jako struktury doświadczenia mentalnego.W pracę dokonano analizy wpływu parametrów stylów poznawczych na repertuar oraz produktywność zachowania intelektualnego jednostki. Stwierdzono, że wzmocnienie poszczególnych biegunów stylów poznawczych, a mianowicie: zachowanie unikające obiektów, konceptualizacja abstrakcyjna, refleksyjność, szeroki zakres ekwiwalencji, elastyczność kontroli poznawczej, wiąże się z wyższymi wskaźnikami kompetencji intelektualnych lub dojrzałości poznawczej. Częściowo potwierdzone założenie, że istnieje jedna podstawa poznawcza („meta-miara”)

sposobów przetwarzania informacji (wyższy poziom funkcjonowania psychologicznego), w odniesieniu do której SP jest jego częściowym przejawem.

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Andragogical paradigm of organization of educational process in high school: psychodidactic aspect

Introduction.

All the processes of studying and education are traditionally associated with pedagogics that has centuries-long history and developed theory of these processes. However, the experience shows that pedagogical principles, approaches to substantiation of the subject-matter of education, recommendations to the structure of learning and upbringing are mostly oriented on the secondary school and are little used in higher institutions.

Experienced pedagogues of the universities, that have scientific degrees in some technical specialties, are the heads of the departments and universities who thanks to long practice have realized the necessity of forming of the scientific base of university teacher training, generalize their experience in monographs of organizational methodological aspect[1]. The development of the high school didactics is usually done by the experts who got training in pedagogical universities and teach there[2]. Such experts have pedagogical beliefs that were formed on the basis of school pedagogics, but most often oriented on the interests of the pedagogical universities.

The analysis of the experience and needs of the contemporary high school and especially technical one shows the necessity of studying and taking into account the existing paradigms of the guided learning and teaching, revealing their didactic and social-pedagogical potential, possibility and purpose of use on different age and learning stages (Yu. Fokin), the topicality and potential of the andragogical paradigm of training (M. Vershlovsky, N. Hromkova, S. Zmeiev, N. Klokar, I. Kolesnikova, L. Naboka, V. Puntsov, L. Sihaieva, S. Protasova, E. Starobynsky, O. Tonkonoha, I. Yakuhno and others). On the basis of structural (V. Slationin, N. Talyzina, N. Udalov), functional (V. Antypova, N. Kuzmina, N. Levitov), systemic (V. Bespalko, I. Blauberg, B. Markarian, V. Poliakov), dynamic (Z. Yesarieva,

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N. Svyrydova), personality oriented (K. Bondarevska), the general problems of the learning theory in high school are analyzed (S. Arhanhelsky, A. Verbytsky, Ye. Kniazeva, L. Ruvinsky); the problems of the theory and practice of pedagogical education, its andragogical element are investigated (O. Abdullina, Ye. Bielozertsev, Ye. Bondarevska, H. Heller); the peculiarities of the high school teachers are revealed (B. Ananiev, N. Kuzmina); the characteristics of the professional teacher training and advancing of their pedagogical culture (L. Makarova, V. Molchanovsky, I. Radchenko. H. Skok); the methodology of competence forming in the analytical work of scientific and pedagogical staff is theoretically grounded and developed (O. Yaryhin).

Today we can say that there are a number of education paradigms among which traditional-conservative (knowledge), rational (behavioral), phenomenological (humanistic), technocratic, non-institutional, humanitarian, learning «by discoveries», esoteric paradigms. They are different in their approaches to the choice of education's main aim, the understanding of the role and purpose of education in the system of social institutes, its vision in the system of a person's preparation to life, forming of general and professional culture of the younger generations. However, two main complete and system paradigms were established in modern education: forming (traditional) and personality oriented (humanistic). The forming paradigm in its turn splits into two types – knowledge-oriented and activity-oriented approaches to the content and technologies of education.

The consideration of contemporary education paradigms and approaches to its organization allows to conclude that today education for a person is not only a sum of knowledge, abilities and skills, but also includes psychological readiness to its continual accumulation, renewal, processing, in other words – to constant self-education, self-upbringing, self-development and self-perfection. The mentioned paradigms exist in the system of education, global object of pedagogics, because they unite the processes of training and upbringing and are the internationalization of the social cultural values shared by the members of society.

Taking into consideration the diversity and at the same time consistency of the existing paradigms of the guided learning and teaching, the methodological drawbacks of the works in this field were well characterized by M. Nikadyrov in 1974 when editing one of the textbooks for high school; «… The author refers to the «classic» theory of learning… to the didactics of the secondary school, to what has been accumulated in the centuries-long practice. Certainly, it is a correct approach, though… a very important question of methodological character is slighted: how much the extrapolation of the conclusions and recommendations of the school education on the conditions of high school are justified»[3].

The purpose of the article is to analyze the axiological plane of the category «teaching paradigm», to justify the appropriateness of the andragogical paradigm, and the psychodidactic approaches to the organization of the educational process in higher technical education.

[3] Nikandrov, N.D. (1974). Kak razvivat'sya vuzovskoj didaktike. *Vestnik vysshej shkoly, 12,* 81-84. – c.17.

1. The paradigms of learning and teaching in a technical university: axiological aspect

Since by the middle of the 20th century it was considered that after being 20 years old a person is less able to learn, pedagogics and pedagogical psychology developed mainly as children's pedagogics and psychology. In the 60s of the 20th century B. Ananiev spoke against such state of affairs and proposed the idea about the necessity of investigations of a person's psychic dynamics in mature age and the peculiarities if his learning on different stages of life.

The term "paradigm" (from Greek «*paradeigma*» – pattern, example) means precise scientific theory embodied in the system of concepts that express the most essential peculiarities of reality. Its second meaning is used to characterize the generally recognized scientific achievements that present the model of the formulation of problems and their solutions during some period to the experts' community. It is used in this sense in the pedagogical theory to signify the conceptual approaches to education (N. Savotina, M. Skrypnyk). The paradigm in pedagogics means: 1) «…the initial conceptual scheme, the model of problems formulation and their solutions, research methods existing during some historic period»; 2) «… the theory (or model, type of the problem formulation) accepted as an instance of the solution to the research tasks»[4].

The question of clarifying of the pedagogics' paradigm remains relevant today.

It is natural that each paradigm is based on a certain conception.

The conception is 1) «... a certain way of understanding, treatment of any notions, the main point of view, the guiding idea for their clarification; 2) the leading idea, the constructive principle of different activities»[5]; 3) «...the system of beliefs, a particular understanding of phenomena and processes'»[6]. The conception is a certain (adopted and consistently implemented) view on the studied processes and phenomena, a considered approach to solving specialist's problems. Even A. Einstein said that the future of humanity depends not only on scientific and technological progress, but on the moral foundations of society, and the scientific and technological revolution has shown that the application of the scientific results is not the problem of the science, but the problem of ethics, morality and politics. To illustrate the traditions of the conceptual approach to the problems of higher technical education the documents of Technical Academy (1844), later the Polytechnic School (1877) and Lviv Polytechnic (since 1920) and the main principles of the «Notes to the founding of St. Petersburg Polytechnic Institute», developed in the early XX century, can be presented.

Analyzing the characteristics and conditions of education and training in secondary and higher schools, we can not but conclude on the need of use of different learning paradigms in these fields. Only as a result of a comparative review of school, university and other teaching situations four different paradigms of learning were

[4] Savotina, N.A. (2012). Ponyatie «paradigma» i ego status v pedagogike. *Pedagogika, 10*, 3 – 11.
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identified: pedagogical, andragogical, acmeological and communicative[7]. Each of these paradigms of the guided learning and teaching of the objective human experience has its own theory of education and learning, or the theory of the guided learning and teaching.

The pedagogical paradigm is a set of approaches to solve the problems of education and training, which is used by traditional pedagogics and is focused essentially on secondary school, education for children unable to understand their needs and realize that education implements one of their personal fundamental life necessities. The name of this paradigm as pedagogics itself comes from the Greek words «paidos» (child) and «ago» (lead), the association which literally means «child leading».

The teacher's activity corresponding to this paradigm is focused on upbringing, development, rigor, knowledge transfer, prescription, compulsion, daily tasks and their control. Means of activation are interest and focus on the interest. In this approach, the student is inevitably in the position of an object of guided learning and teaching that can lead to passivity, the desire of students in any way not to get failing grade, the loss of interest.

The desire to find a new paradigm was manifested quite stable at different stages of social development. It is embodied in the works of V. Sukhomlynsky, V. Shatalov, M. Shchetinin, Sh. Amonashvili[8] and other teachers-innovators of the second half of the 20th century in developing the cooperation pedagogics, calling for turning education towards personality development[9]. Recently, emphasis is put on education orientation to «a person of culture», which aims to change the former orientation to «a person who knows'»[10].

Although andragogics appeared as part of pedagogics focusing on adult education by school type (in the interpretation of theorists, andragogics aims to reveal patterns, social and psychological factors of effective education, training and adult upbringing[11]), the main difference of andragogical approach is the subject's understanding of his needs that are satisfied in education and conscious activity, activity to meet them, or, according to M. Smyrnova, E. Starobynsky inclusion of the specialist in the process of understanding his personal and professional goals through correlation with the aims and values of modern life, one's own needs, demands, expectations[12]. S. Vershlovsky focuses on the fact that «... adult education is effective to the extent to which the conditions that help to critically assess their experience and

[7] Fokin, Yu. G. (1994). Kazhdoj paradigme – svoyu teoriyu. *Magistr, 2,* 34-41.
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[12] Smyrnova, M. *Andrahohichni osnovy navchannia pedahohichnykh pratsivnykiv u protsesi pidvyshchennia kvalifikatsii.* Retrieved from http://virtkafedra.ucoz.ua/el_gurnal/pages/vyp11/1/Smirnova.pdf; Starobinskij, E'. E. (1997). Povyshenie kvalifikacii menedzherov – process nepreryvnyj. *Upravlenie personalom, 1*, 5 – 10.

understand the essence of the role of knowledge in a broad social aspect are made»[13]. Thus, the main purpose of the andragogical approach is the person's socialization. Socialization is 1) qualitative and quantitative changes of values, socially important beliefs and attitudes, ideals, moral personality traits necessary to succeed in a society and which are achieved in the individual's activities; 2) the process of learning and active performing of an individual social experience, the system of social connections and relationships in his own experience[14].

This paradigm considers social development and identity formation only in the process of self-conscious activity, and not as a result of external spontaneous influence. The guideline of andragogics, unlike traditional pedagogics, is that the student and not the instructor play the leading role in the learning process. The function of the teacher in this case is to assist the individual in identifying, organizing, formalizing of personal experience, adjusting and updating the student's knowledge. So higher education is focused on socialization (professional socialization). Since in this case the subject tries to get vocational education necessary for successful work in a given society, the guidance of learning and teaching inevitably focuses on current social norms which meet the education recognized by the society. In the process of socialization a person acquires qualities, values, beliefs, socially approved behavior needed for normal life and work in this society. Taking into consideration such peculiarities of higher education the function of the teacher and the priority of teaching methods change (the last acquire active character because of the factors related to learning motivation and need sufficient level of student's socialization).

The main category of the acmeological paradigm is self-realization. In this case, as a result of this activity, and the way to the top of the scale for measuring the progress achieved in the process of professional training cannot be appointed by the society: they are the product of the activity and function of the subject if he chooses the acmeological way for his development. In professional acmeology, aimed at achieving by the learning subject top professional skills, the independence from the standards recognized by the society is relative: a student has to focus on the existing professions which are most in his abilities and inclinations. In this regard, the foundations of adult pedagogics, acmeology as an interdisciplinary field of knowledge about a person in adulthood, were established[15]. Thus, the pedagogical science covered all three major stages of life: childhood (pedology), adulthood (acmeology), senility (gerontology). In the 90s prefix «acme-» was seen as the top (the highest level of achievement of something) human development based on the realization of the person's abilities and possibilities, that led to the appearance of such tendency, as professional acmeology[16]. At the same time scientific discipline andragogics

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[13] Vershlovskij, S. G. (1997). *Social'no-pedagogicheskie problemy razvitiya sistemy poslediplomnogo obrazovaniya vzroslyx*. Obrazovanie v zhizni vzroslogo cheloveka: mater. nauch.-prakt. konf. Sankt-Peterburg: Izd-vo V.A.Mixajlova, p. 10.

[14] Melnychuk, O. (Red.). (2008). *Sotsiolohichna entsyklopediia*. Kyiv: Akademvydav.

[15] Yakunin, V. A. (2000). *Pedagogicheskaya psixologiya.* Sankt-Peterburg: Izd-vo V.A.Mixajlova.

[16] Zazykin, V. G. & Chernyshev, A. P. (1995). *Akmeologicheskie aspekty professionalizma*. Moskva: Pedagogika; Kuz'mina, N.V. (1991). *Professionalizm deyatel'nosti prepodavatelya i mastera proizvodstvennogo obucheniya proftexuchilishha*. Leningrad: Izd-vo LGU.

associated with adult learning is actively developing[17]. All these require differentiation and coordination of the acmeological and andragogical approaches when considering phenomena and problems of higher education[18].

The acmeological paradigm focuses on teaching to help the subject of training in reaching the top of his capabilities, the fullest realization of his personality's potential. In acmeological works the main purpose of this paradigm is considered to be the achievement the top of teaching professional skills by the subject of learning[19]. It was quite natural in terms of the orientation of education to prepare necessary to the state experts and considering vocational training as the main value. However, according to this approach the paradigm also focuses on social norms and actually duplicates the andragogical one. This tendency can be called professional acmeology.

The communicative paradigm is a paradigm of peer teaching which is realized when the subjects of didactic interaction are aware of their needs and are competent in their every subject, exchange their achievements for the rapid dissemination and application of acquired new information and experience. A characteristic feature of this study is the active subjects' of didactic interaction participation in selection of the study objects and it provides the transition of the learning subject to the teaching subject (from those topics in which he is more competent) and vice versa.

Unlike other paradigms, where the selection of the objectified human experience is mainly done by teachers and society instead of students, the communicative paradigm considers cooperation in training equal competent partners, able to objectively evaluate the significance of possible objects of learning, exchange roles depending on the purpose, i.e. to become either the object or the subject of training. Self-improvement is the main category of the communicative paradigm, when new elements of the objectified human experience are understood by each individual; joint activity of individuals as subjects of study, which aims to enrich the experience of each participant and exchange of knowledge and skills of all the participants, is also involved.

The main reason for the teachers' of the higher educational establishments claims on traditional pedagogics is related to the fact that it, implementing only one (teaching or school) education and training paradigm, does not specify the limits (didactic, age, communication, professional) of application of its principles. This leads to the fact that the recourse to traditional pedagogical textbooks by the teachers of technical and other non-pedagogical universities does not meet their expectations, their hopes for a scientific help of such pedagogics in improvement of the teaching practice in higher educational establishment. «Targeting the foundations of knowledge and science apparently exhausted itself and has brought pedagogics to a

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[17] Zmeev, S. I. (1995). Andragogika – stanovlenie i puti razvitiya. *Pedagogika, 2*, 27-32; Zmeev, S.I. (1997) Proizvodstvo kompetentnyx lyudej. *Novye znaniya, 1*, 31-35; Ukke, Yu.V. (1992). *Professional'naya samorealizaciya lichnosti i andragogicheskaya orientaciya poslediplomnogo obrazovaniya. Poslediplomnoe obrazovanie: Potrebnosti, problemy, resheniya.* Moskva: Nauka; Knowless, M.S. & ass.(1985) *Androgogy in action. Applying Modern Principles of Adult Learning*. San Francisco; London.

[18] Fokin, Yu. G. (1994). Kazhdoj paradigme – svoyu teoriyu. *Magistr, 2,* 34-41.

[19] Zazykin, V. G. & Chernyshev, A. P. (1995). *Akmeologicheskie aspekty professionalizma*. Moskva: Pedagogika.

standstill... Today... in learning ability and there is need to form skills and teach the generalized activity methods. It is necessary to teach students not the knowledge of disciplines, but intellectual activity» was mentioned in the discussion about training strategy in 1988[20]. Its members saw the causes of the crisis of education in its direction to the past, already achieved by the humanity (according to the terminology of «The Roman Club» in «supportive studies») while there is a necessity in innovative training focused on the future.

The former strategy and policy for the development of higher education, including the proposed by UNESCO, do not give proper results. It is stated in «Philosophy of Education for the 21st Century» that «... to overcome the global crisis of higher education, as well as its manifestations at the regional and national government levels, requires rethinking of the initial ideas about the nature of international educational practices, about the goals and values of training and education, their contents and methods». Thus, according to many representatives of the higher education, it is about creating a new philosophy of education adequate to the challenges of the 21st century. The emergence of collective monograph «Philosophy of Education for the 21st Century: Collection of Articles» (Moscow, 1992), as well as works of B. Hershunsky, S. Hessen, E. Husynsky, V. Shadrikov, reflects the current state of society. However, the director of the European Center for free time and activities I. Savytsky understands under the philosophy of education «... a system of ideas about the world and a man's place in it, which can identify the goals of education, its structure, basic organizational principles, relationships between a teacher and a student, etc.» and, therefore, the dominant training (the term by I. Lerner).

It is stated in the report on the results of the international symposium «Philosophy of Education in the Perspective of the 21st Century»: «The crisis of education turned into a global phenomenon, the failure in the implementation of the adopted earlier policies and strategies for the implementation of reforms highlight the same philosophical understanding of the situation. It is impossible to achieve certain objectives in the field of higher education put forward both internationally and at the national and state level without the development of new conceptual, methodological and axiological approaches».

The problem of the learning process on the efficient paradigmal basis is particularly acute felt in higher technical educational establishments. Since 1972, Europe has International Society for Engineering Education (IGIP), based in Klagenfurt (Austria), which is actually the European Association of teachers of technical subjects in high school. The International Society for Engineering Education maintains the Register of European teachers of engineering universities (Der Europaische Ingenieurpadagoge, The European Engineering Edukator, ING-PAED IGIP), the enrollment to which occurs on the submission of the national associations and is confirmed by the issuance of a corresponding certificate. The

[20] Prixod'ko, V. M. & Manujlov, V. F. & Lukanin, V. N. i dr. (1998). *Vysshee texnicheskoe obrazovanie: Mirovye tendencii razvitiya, obrazovatel'nye programmy, kachestvo podgotovki specialistov, inzhenernaya podgotovka.* Moskva:Nauka; Shadrikov, V. D. (1993). *Filosofiya obrazovaniya i obrazovatel'nye politiki*. Moskva: Vysshaya shkola; Knowless, M.S. & ass.(1985) *Androgogy in action. Applying Modern Principles of Adult Learning*. San Francisco; London.

candidate for certificate «European teacher of engineering high school» should be a graduate engineer, have at least two years experience of engineering or scientific technical activities, successfully work as a teacher in high school for at least one academic year, speak one of the common European languages, as well as undergo a series of teacher training, which is not inferior in terms of content and sufficient minimum of the IGIP program requirements[21].

Detailing requirements for the specialist of technical profile the World Congress on Engineering Education in 1992 adopted the following requirements for university graduates:

- professional competence (a combination of theoretical knowledge and practical training of graduate, his ability to carry out all the types of professional activity, defined by educational standards of the course or specialty);
- communicative readiness (skills in literary and business written and spoken language and speech activity; knowing at least one of the most widely used foreign language, skills to develop technical documentation and use it, the ability to use computers and other means of communication and information including telecommunication networks; knowledge of psychology and ethics of communication, skills of professional group or team management);
- developed capacity for creative approaches in solving professional tasks, the ability to navigate in unusual circumstances and situations, to analyze problems, situations, tasks, and develop action plans; commitment to plan and the responsibility for its implementation;
- stable, conscious, positive attitude to one's profession, desire to continuous personal and professional development;
- knowledge of methods of technical-economic analysis of production with the aim of rationalization, optimization and renovation, as well as methods of ecological providing production and engineering environmental protection;
- understanding the tendencies and main trends of science and technology development [22].

The outlined requirements for graduates of engineering higher educational institution may be provided in compliance with the basic principles of andragogics: prioritizing of self-training, joint activities of the subjects of the learning process, using existing positive experiences, adjustment of obsolete experience and personal settings that prevent new knowledge, individual approach to training, electivity, reflectivity, the demand of learning outcomes by the practical activity, systematization, actualization of the learning results, the individual's development. N.Yaksa calls such a system of education principles within the andragogical

[21] Melecinek, A. (1996). *Utverzhdenie v kachestve evropejskix prepodavatelej inzhenernyx vuzov: Opisanie kompetencii prepodavatelej inzhenernyx vuzov, osushhestvlennoe ING-PAED*. Klagenfurt (Austria); Prixod'ko, V. M. & Manujlov, V. F. & Lukanin, V. N. i dr. (1998). *Vysshee texnicheskoe obrazovanie: Mirovye tendencii razvitiya, obrazovatel'nye programmy, kachestvo podgotovki specialistov, inzhenernaya podgotovka.* Moskva: Nauka.

[22] Melecinek, A. (1996). *Utverzhdenie v kachestve evropejskix prepodavatelej inzhenernyx vuzov: Opisanie kompetencii prepodavatelej inzhenernyx vuzov, osushhestvlennoe ING-PAED*. Klagenfurt (Austria).

paradigm: the priority independence training, relying on the student's experience, individualization, systematization, actualization of the learning outcomes, electivity, the context of study[23].

Based on the nature of the main principles of higher technical education the peculiarities of the andragogical paradigm are: the autonomation of the institution and the student as a subject of study; it closely connects the concepts «adulthood» and «education»; together with the concept of «social maturity», the concept of «professional socialization» is formed, based on the use of internal forces and human aspirations for self-development, self-improvement, and student autonomy and higher establishment in the educational process, electivity in training, participatory of educational interaction.

The idea of autonomy of the university and the student as a subject of educational and professional interaction involves flexible organization of educational process that focuses on student's freedom of choice of the further educational trajectory while maintaining emergence of education in general.

The essential feature of the autonomy of the educational process is «to ensure freedom of choice», i.e. the freedom of students to choose and refine their educational trajectory, i.e. to freely choose subjects, order of priority and duration of digestion of their content. A. Andreiev says that ensuring freedom of choice implies the existence of a number of features of the future system of open higher education, among which the most specific are:

- assurance of free access to information resources;
- providing individualized approach to studies;
- the change of participants' roles in the educational process[24].

The possibilities of really free choice must be organizationally provided to students at the end of each semester or year.

As for higher education establishments that operate in the domestic realities, it is efficient to consider such a structure not as an alternative to existing one, but as an additional one prevailing in universities, where teachers focused on the traditional system can work successfully. If the university has such structures, the conditions for self-organization of all the elements of the university will be created, the components of the structures that will be elected by a large number of students will develop.

The andragogical paradigm of the guided learning and teaching involves fundamental changes in the professional identity of teachers of technical high schools: awareness of the differences between the anthropocentric orientation of the teacher from the usual technocratic direction of the professional's technical profile, understanding the current state and peculiarities of the sciences about professional higher education, their orientation on the individual's professional socialization.

The philosophical distinction and the essential consideration of cognition and acquisition of others' objectified experience are necessary to clarify the importance of

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[23] Iaksa, N.V. (2014). Andrahohichna model navchannia. *Andrahohichnyi visnyk: Naukove elektronne periodychne vydannia, 5*, 47-52.

[24] Andreev, A. A. (2000). *Pedagogika vysshej shkoly: (Prikladnaya pedagogika)*. Moskva: Vysshaya shkola.

training and education of the individual in the progress of mankind. Unlike traditional pedagogics this meaning is not declared and is derived from the consideration of the objective needs of the individual and society and their satisfaction: empirical cognition of the objective the world is gradually complemented by other types of knowledge, accumulating results in available to other people objectified social and professional experience. Mastering these results accelerates the specialist's development, since it deprives him of the simple repetition of what has already been comprehended by the predecessors. On this basis, some philosophical statements that are benchmarks for a teacher are introduced:

- orients the teacher in an objective existing of different paradigms of education and differences of the andragogical paradigm (characteristic of high school) from traditional pedagogical (school) paradigm;
- introduces the need to take into account the andragogical paradigm for conceptual rethinking and synthesis of the specialty theory;
- promotes the concept of unambiguous simple definitions to develop logically consistent theory of learning in higher education.

The adoption of the andragogical paradigm of the guided learning and teaching in higher technical school formed in such proceedings, allows to precise and direct the teacher's of higher technical educational institution for professional socialization of the future specialist.

Experience shows that without the consideration of these issues, without finding out the differences between the paradigms, the further study of definitions and statements of the andragogical theory of learning in high school the teachers will not have proper understanding and forms hope that the foundations of the educational process in high school are already written in traditional pedagogical textbooks.

An important plane of the andragogical pedagogics is the realization that to maximize the achievement of its objectives it is necessary to separate adults by different age categories (generations). Social science differentiates three age categories: under 25, from 25 to 45, over 45. Each age category requires additional research on the ways of implementation of the andragogical paradigm and development of the adapted technologies of the guided learning and teaching with regard to their age specifics and potential, prediction of goals, approaches, adequate methods and forms of study.

The first category is divided into two groups: people who have and have no vocational education. Respectively, the first group should be given education so that they join the professional activities in specially organized training classes. The conditions for professional development should be created for the second group.

The second category has professional education and working experience; targeted professional development, the realization of personal potential within the andragogical paradigm of the guided learning and teaching are urgent.

The third category of adults, despite the fact that it has reached a certain social and professional status, also requires continuous, adaptive study, but this study in many cases is impossible without the interaction with the first and the second categories, and therefore without interactive learning.

However, the society oriented on the andragogical paradigm of learning involves activation and professional socialization of future specialists (giving them increasing opportunities to manifest each individuality), objectively interested in implementing of the andragogical paradigm of the guided learning and teaching in order to enrich educational and professional opportunities for each subject, to increase recognized by the society levels and features of the specialist's technical.

2. Axiology of Didactics of adults D. Kolba and andragogical styles of teaching in higher education

Didactics of adults D. Colb and taking into account andragogical styles of study in higher education is a psychodidactic basis for the implementation of the andragogical paradigm. The system approach to adult education organization proposed by D. Colb provides for a clear structuring of adult learning activities in the form of a two-level learning model (perception and reflection), which involves four stages: (1) concrete experience, (2) observation and reflection (3) the formation of abstract concepts and (4) application in new situations. The peculiarities of adult perception and reflection determine the style of his studies and approaches to its inclusion during vocational training.

Well-organized informational streams ensure the effectiveness of adult education. Bill Gates admitted: «Exactly how you collect, organize and use information will determine whether you win or lose».

It is actual for individual knowledge and learning. The person who has knowledge retains competitive advantages. Since a great half of our knowledge becomes obsolete for about three years, we must constantly replenish it. If a person stops learning, he quickly finds himself on the sidelines of life. Permanent learning is a prerequisite for success in life, and knowledge of one's own style of knowledge facilitates this process.

According to our style of cognition, our characteristic perception and interpretation of information are determined, as well as our reaction to it. The cognitive style has two main measurements: (1) the method for collecting information and (2) the method for evaluating and using information. They are investigated by The Learning Style Inventory – LSI[25].

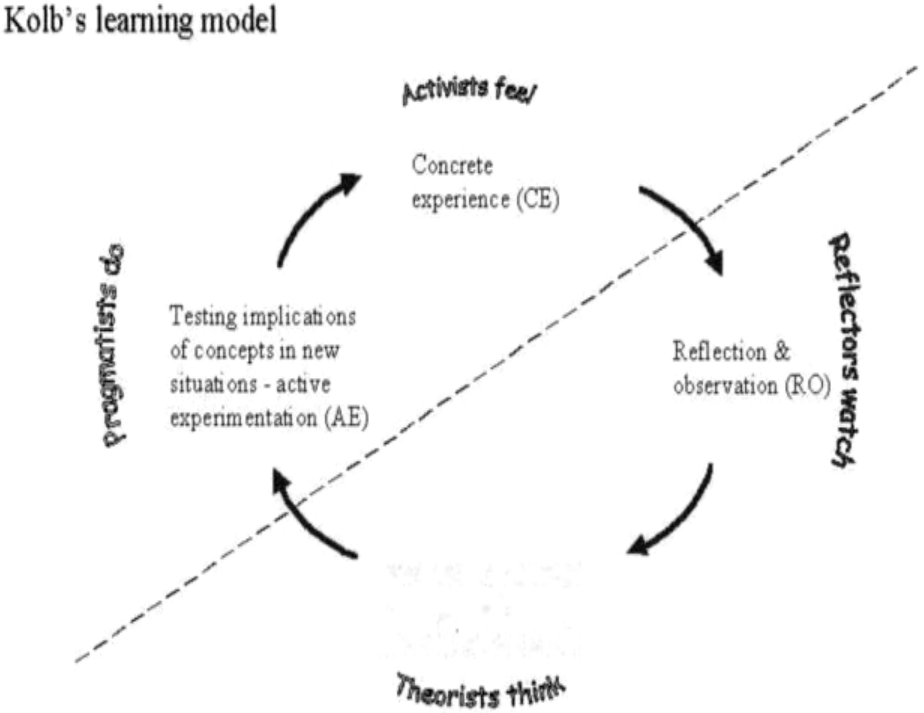
D. Kolb's concept proceeds from the fact that an individual receives information, and pays attention, assimilates some types of information on a greater degree than other. At the heart of all theories of individual learning style lies a single premise – all individuals perceive, process and present information in different ways. According to D. Kolb[26], each person has its own individual learning style, which is a combination (blending) in various proportions of the four main styles mentioned above. Knowledge of its own individual style of learning, firstly, helps to use its strengths, for example, in

[25] Kolb, A.Y., & Kolb, D.A. (2005). *The Kolb Learning Style Inventory – Version 3.1: 2005. Technical Specifications.* Haygroup: Experience Based Learning Systems Inc.

[26] Kolb, D. A. (1976). *The Learning Style Inventory: Technical Manual*. Boston, Ma.: McBer; Kolb, D. A. (1981). *'Learning styles and disciplinary differences'. in A. W. Chickering* (ed.) The Modern American College, San Francisco: Jossey-Bass; Kolb, A.Y., & Kolb, D.A. (2005). *The Kolb Learning Style Inventory – Version 3.1: 2005. Technical Specifications.* Haygroup: Experience Based Learning Systems Inc.

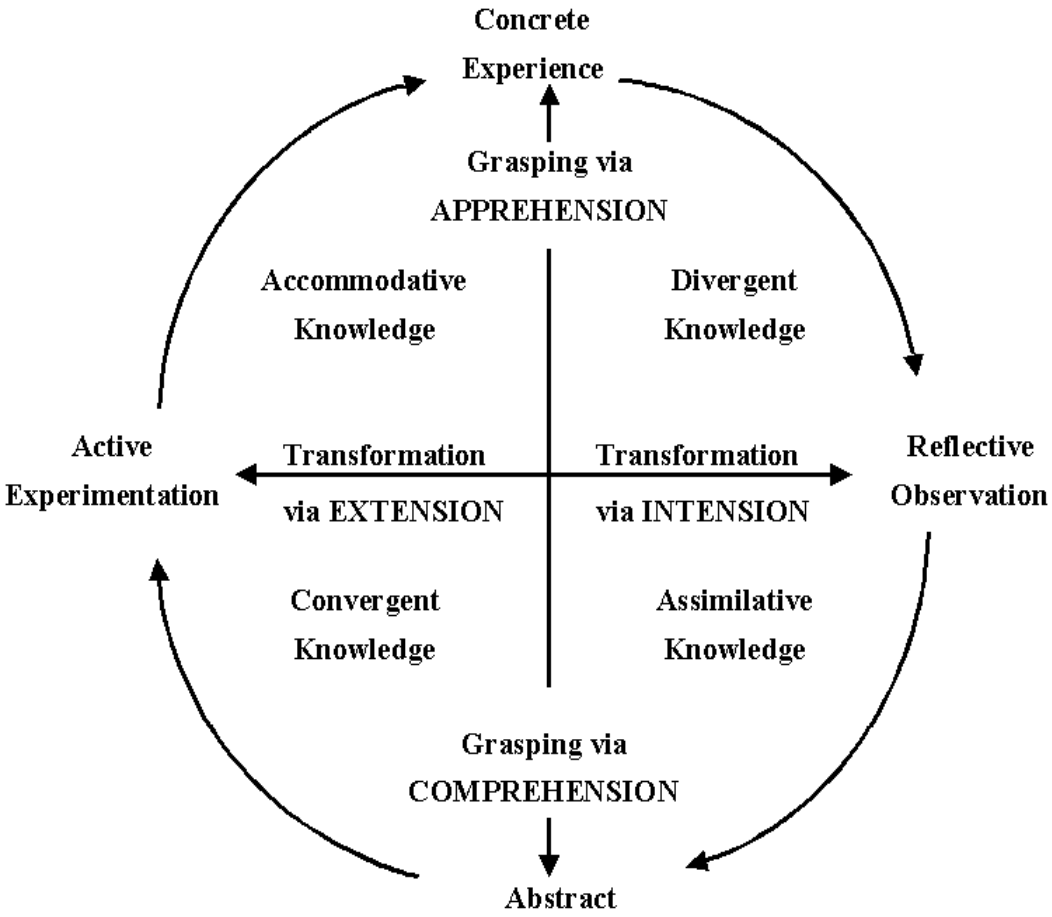
building a career, and, secondly, it allows conducting purposeful work on compensation and elimination of its weaknesses. As foreign authors note, knowledge of their individual learning style helps students «move on higher levels of their personal and cognitive functioning» (Knox A., 1986). However, the maximum effect is achieved through the usage of knowledge about the individual learning styles of their students by the teachers, that is, when applying the theory of adult learning which is based on the experience in the teaching process. At the same time, we should not forget D. Kolb's warning that the individual learning style is not established once and for all the times, and may change with the passage of time and circumstances.

The picture shows two dimensions of cognition: information gathering (concrete experience is contrasted here with abstract conceptualization) and reaction to information (reflexive observation is contrasted with active experimentation here)[27].



Each position or inclination is the result of choice. Thus, it is almost impossible to simultaneously control a car (specific experience) and analyze engine characteristics (abstract conceptualization). The study of the possible value of information (reflexive observation) cannot be combined with an experienced test of its significance (active experimentation). Researches of these cognitive measurements have shown that regardless of the nature of the problem that the person faces with, during the studying it, he, as a rule, retains his inherent style of cognition. He is towards the well-defined situations and types of problems which correspond to his inherent style of cognition (for instance, individuals who embrace abstract conceptualization and active experimentation, prefer problems that allow step-by-step resolution)[28].

[27] Kolb, D. A. (1976). *The Learning Style Inventory: Technical Manual*. Boston, Ma.: McBer.
[28] Kolb, D. A. (1976). *The Learning Style Inventory: Technical Manual*. Boston, Ma.: McBer; Kolb, A.Y., & Kolb, D.A. (2005). *The Kolb Learning Style Inventory – Version 3.1: 2005. Technical Specifications.* Haygroup: Experience Based Learning Systems Inc.



Cycle of Kolb's learning styles and in-class activities (1984)[29]

Structurally functional approach to the study of styles of activity is based on the selection of the main stages and functions of the activity. At present, methods based on D. Kolb's training model dominate in western pedagogy.

In the early 1980s, J. Mezirow, P. Freire and others showed that at the basis of any learning is the processing of experience, or rather, the critical reflection of experience. They viewed learning as a three-phase cycle, which begins with getting of specific experience (first phase), continues with reflection (second phase), which leads to certain actions (third phase) giving a new concrete experience for the reflection (Rogers A., 1996).

Within the framework of this theory of learning based on experience (Experiential Learning Theory – ELT), D. Kolb developed its own learning model (Kolb D., 1976, 1981, 1984, 1998; Kolb D., Fry R., 1975; Kolb D., Lublin S., Spoth J., 1986, etc.). D. Kolb singled out two parts in reflection: perception and processing. Thus, he added another stage, which he called «Abstract Conceptualization». If at the stage of critical reflection a person considers a new experience from the point of view of previous experience, then at the stage of abstract conceptualization he, through using logic, tries to search answers: he forms hypotheses, makes generalizations and conclusions. Usually, at this stage there are systematic planning, developments of

[29] Kolb, D. A. (1984). *'Learning styles and disciplinary differences'. in A. W. Chickering* (ed.) The Modern American College, San Francisco: Jossey-Bass.

theories, solving of the problem. The action phase, in the interpretation of D. Kolb, becomes the phase of active experimentation, where a person tests hypotheses, trying to get a practical, really working method. Thus, the famous learning model which is based on the experience of D. Kolb (Kolb's Experiential Learning Model) includes four stages: (1) specific experience, (2) observation and reflection, (3) the formation of abstract concepts and (4) testing in new situations.

D. Kolb and R. Fry (Kolb D., Fry R., 1975) admit that learning can begin with any of the four stages. However, the learning process most of all begins with person performing a specific action. The effect of this action is analyzed on the second stage, so its consequences can be predicted when repeated in the same circumstances.

At each stage, a general principle is formed, under which a specific action falls, which gave rise to this cycle. The formation of a general principle does not mean its expression in a symbolic form (in the form of a word, or concept), but involves only the ability to see the connections between actions and their consequences, based on understanding of the general principle (Coleman J., 1976). When the general principle is understood, the last (fourth) stage is its attachment in practical activity.

Some authors describe the stages of D. Kolb learning model as a closed cycle. In fact, learning is a continuous spiral, since a new action occurs under another circumstances and a person is now able to assume its possible consequences. According to D. Kolb and R. Fry (Kolb D., Fry R., 1975), effective learning should lead to the development by man of all four stages of the model. Thus, based on a combination of preferred mechanisms of collecting, processing and using information, styles of human cognition can be determined.

Each type adult student corresponds to the benefits they give to separate moments in the learning process: focusing on the stage of the study cycle; manifestations of typical peculiarities of cognitive behavior; requirements for the learning process; requirements for other participants in training; to the system of typical questions that are relevant in the learning process[30].

Activists. -Focus on the stage of the study cycle: personal experience;

-*manifestations of typical features of cognitive behavior*: prefer to learn new in the process by means of trial and error; independent and active; immediately immerse themselves in new activities; sociable, like to solve problems in the group, they are enthusiastic, not conservative and not inclined to skepticism; get pleasure in solving tasks with maximum voltage; often lacking the patience to engage in work related to the implementation and consolidation of knowledge and skills;

- -*requirements for the learning process*: free choice of priorities and ideas; a wide range of tasks and opportunities; the ability to manage or organize other people's activities; absence of «boring» and many hours of lectures;
- -*requirements for other participants of training*: freedom of discussions; pleasant atmosphere; recognition of leadership; generation of ideas;

[30] Kolb, A.Y., & Kolb, D.A. (2005). *The Kolb Learning Style Inventory – Version 3.1: 2005. Technical Specifications.* Haygroup: Experience Based Learning Systems Inc.

- -*the system of typical questions that are relevant in the learning process*: Will I learn something new?; Will I get new knowledge? Should I sit and listen to a teacher for a long period of time?; Will be different kinds of activities presented in the educational process?; Will it possible to keep yourself at ease, allow yourself to make mistakes and have fun?; Will be there complex tasks that require considerable efforts?; Will it be possible to chat with like-minded people?

Notionalists. -*Focus on the stage of the study cycle*: comprehension and reflection;

- -*manifestations of typical peculiarities in cognitive behavior*: initially ponder, then act; give preference to their own decisions; like to relinquish the situation, to comprehend their experience; pay much attention to the collection and analysis of information; operate in a broad context that includes the past and the present; tend to be unnoticed and create an atmosphere of tranquility and tolerance around them; main motto: «Sevenfold measure, one cut»;
- -*requirements to the learning process:* devoting sufficient time for reflection; the ability to work at its own pace without strict terms; complex research; collection and analysis of information; independent and long-term training;
- -*requirements for other participants in the learning process*: lack of pressure and haste; tolerance to different opinions and views; providing autonomy; recognition of «expert» position;
- -*the system of typical questions that are relevant in the learning process*: Will I get enough time to master and train?; Will be the opportunity to collect various information provided?; Is it possible to get acquainted with different thoughts and views on problems?; Will be no pressure on me? Will I be able to perform tasks carefully and in a comfortable rhythm?

Theorists. -*Focusing on the stage of the learning cycle*: the formulation of rules and the formation of theories;

- -*manifestations of typical peculiarities of cognitive behavior*: solving problems step by step; uniting separate facts in a harmonious theory; prefer to analyze; appreciate rationality and logic; prone to system thinking; aspire to perfection; solve problems on the basis of formal logic, gradually and systematically in the scheme «from simple to complex»; seek to combine new theories with that they already know; do not trust intuition;
- -*requirements to the learning process*: clarity of goals and tasks; structuring of the program; logic and consistency of material presentation; intellectual voltage; enough time for reflection; proper instructions;
- -*requirements for other participants in learning process*: lack of pressure; high intellectual level; the priority of objectivity and logic;
- -*system of typical questions that are relevant in the learning process*: Will be given the opportunity to ask questions?; Does the training program suitable for the purpose and structure of the occupation?; What are the requirements of the program to the intellectual level of students?; Will I get knowledge about new

effective methods and concepts?; Will be created the conditions for my intellectual improvement?

Pragmatics. -*Focus on the stage of the study cycle*: practical application;

- -*manifestations of typical features of cognitive behavior*: seek to find practical solutions, quickly try everything and go to action; prefer to test new theories in practice; give preference to concrete steps for solving real problems; like to succeed; act quickly and confidently; constantly looking for new ideas and implementing them as quickly as possible; seek to quickly realization of their knowledge and skills; consider new problems and difficulties as a challenge; Their motto is «Well, what works»;
- -*requirements for the learning process*: the possibility of practical application; practical benefit; the training program provides experiments, practical classes and consultations with qualified practitioners; clear instructions; obvious effect from learning;
- -*requirements to other participants in the learning*: lack of long theoretical discussions and lectures; rapid decision making; generation of ideas;
- -*the system of typical questions that are relevant in the learning process*: is it expected to do practice and experiments?; Do teachers have practical experience in a particular field or are they «theorists»? Will I learn about new effective methods and techniques?; Will be considered real problems?; Will I be able to use the proposed plan to solve some of my current problems? Are there meetings with experienced practitioners?

Conclusions

One of the essential tasks of the teaching method is the realization in practice of a well-founded thesis that the personality of the teacher and the student should be at the center of the educational process. It is no coincidence that the National Strategy for the Development of Education in Ukraine for 2012-2021 envisages reforming the education system based on the «human-centered» philosophy as a strategy for national education; modernization of the structure, content and organization of education on the basis of a competent approach, reorientation of the content of education for the purpose of sustainable development; development of scientific and innovative activity in education, improvement of education quality on an innovative basis; computerization of education; providing national monitoring of the education system; developing higher education standards oriented towards a competent approach in education.

Pedagogical science is incomplete without training and education theories developed on the basis of all these paradigms, it cannot be perceived as a science of the guided learning by an individual of the objectified experience of mankind, and in fact the guided learning is the process, which is aimed at ensuring each of the pedagogical sciences.

The theory of higher education like the rest of high school didactics should realize the andragogical paradigm of the guided learning in its optimal combination with the key ideas of the acmeological and communicative paradigms. Only then we

will take into account the specifics of higher education and put on a scientific basis the problem solving on the definition of a set of disciplines and the synthesis of the content of higher education for specific professions, as well as the high school teachers' acquirement of their professional management of students' learning activity.

The andragogical paradigm of the guided learning and teaching in higher technical school will scientifically prove the requirements for modern educational process and identify the patterns in combined tasks that provide easing the students' information overload, transfer teaching from the level of informing and technologizing to the level of real management of development, socialization and professional development of training subjects. It creates new conditions for conducting each lesson for teacher's conscious choice of methods, forms and means of learning, that take into account the specific objectives of higher technical education. The theory of higher technical education should be developed on the basis of the combination of the acmeological and communication paradigms under the leadership of the andragogical paradigm of learning.

Abstract

The category of «learning paradigm», approaches to the definition of this category, the main modern paradigms of education (pedagogical, andragogical, acmeological and communicative) are considered in the article; the andragogical paradigm of guided learning and teaching, which is an important methodological basis of a person's higher education (including technical one) at all the stages of development; its potential is characterized compared to other learning paradigms; on the basis of a systematic approach the task, main ideas (autonomation of the institution and the student as a subject of study; the connection of the concepts «adulthood» and «education»; together with the concept of 'social maturity' the concept of 'professional socialization' is formed; activity basis is the use of internal forces and the person's aspirations for self-development, self-improvement; autonomation of the student and the university in the educational process; electivity of studies; participativity of training interactions), the principles of the andragogical paradigm (the priority of self-study, a joint subjects' of the learning process activity, using existing positive life/work experience, adjusting outdated experience and personal attitudes that prevent the acquisition of new knowledge, individual approach to learning, electivity, reflexivity, the demand for practical training results, systemacity, maintenance of learning outcomes, individual's development), specifics of the implementation in terms of higher technical education (providing free access to information resources; providing individualized approach to learning; the change of the participants' role in the educational process) and the teacher's of the technical institution of higher education features (awareness of the differences of the anthropocentric orientation of the teacher from the usual technocratic orientation of the professional of technical profile, understanding the current state of science and characteristics of professional higher education, their orientation on the individual's professional socialization). As psychodidactic approaches to the realization of the

andragogical paradigm are the didactics of adults D. Kolbs adults and the consideration of andragogical styles of teaching in higher education.

Key words: the paradigm of guided learning and learning, andragogika, andragogical paradigm, elective learning, autonomy, socialization, professional socialization, higher education, D. Kolb's cycle, andagogical teaching styles.

Streszczenie

Artykuł rozpatruje i uzasadnia andragogiczny paradygmat sterowanego przyswajania wiedzy i uczenia się, który jest ważną podstawą metodologiczną systemu szkolnictwa wyższego (w tym technicznego) na wszystkich etapach jego rozwoju; charakteryzuje jego potencjał w porównaniu z innymi paradygmatami uczenia się. W oparciu o podejście systemowe przeprowadzono analizę zadań, głównych idei, zasad paradygmatu andragogicznego, specyfiki wdrażania w szkolnictwie wyższym oraz specyfiki działalności nauczyciela akademickiego. Jako psychodydaktyczne podejście do realizacji paradygmatu andragogicznego wykorzystana została dydaktyka dorosłych D. Kolba oraz uwzględnionie andragogiczne style nauczania w szkolnictwie wyższym.

Słowa kluczowe: paradygmat sterowanego przyswajania wiedzy i uczenia się, andragogika, paradygmat andragogiczny, elektywność nauczania, autonomizacja, socjalizacja, socjalizacja zawodowa, szkolnictwo wyższe, cykl D. Kolba, andagogiczne style nauczania.

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Foreign experience in developing professional pedagogical competency in lecturers

Introduction

The modern stage of Ukraine's higher education development and its integration into the European and global higher education areas require that the potential of a modern lecturer should be qualitatively enhanced. Under the modern conditions, the lecturer is viewed as a specialist who is knowledgeable of innovative strategies for learning and teaching, is able to involve students in creative activities based on global standards, strives for continuing professional development and is motivated to develop professional pedagogical competency. The study and consideration of international experience in enhancing professional pedagogical competency are the ways to successfully improve professionalism of academic staff.

Competency-based approach incorporated into educational standards of the thirdgeneration is an important factor in enhancing the quality of higher education. The very category of professional pedagogical competency of thelecturer is an integral professional and personal characteristic, which determines the quality of his/her activity, expressed in the ability to act adequately, independently and responsibly in a professional situation, reflects readiness for self-development, manifests itself in professional activity, thus characterizing the lecturer as a performer of pedagogical activity. Professional pedagogical competency of thelecturer is mainly determined by the level of professional education, experience and individual abilities, his/her aspirations for lifelong learning and creative attitude to pedagogical activity.

Innovative achievements of the countries with high-level professional training and development of lecturers in accordance with global standards are of academic interest since they have rich historical traditions of education, considerable experience in training of educators under the new sociocultural conditions.[1] The education systems of the UK, Germany, France, Austria, the Netherlands, Denmark, Finland, the US and Canada are characterized by significant achievements in the quality of professional training for lecturers. Indeed, they have a scientifically justified, practically verified and thoroughly elaborated complex of teaching skills and competencies of educators".[2]

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[1] Avsheniuk, N.M., Diachenko, L.M., Kovtun, K.V., Marusynets, M.M., Ohienko, O.I., Sulyma, O.V., Postryhach, N.O. (2017). *Zarubizhnyi dosvid profeciinoi pidhotovky pedahohiv: analitychni materialy* [Foreign experience of professional training of teachers: analytical materials]. Kyiv: DKS Tsentr. p. 5.

[2] Avsheniuk, N.M., Desiatov, T.M., Diachenko, L.M., Postryhach, N.O., Pukhovska, L.P., Sulyma O.V. (2014). *Kompetentnisnyi pidkhid do pidhotovky pedahohiv u zarubizhnykh krainakh: teoriia ta praktyka* [Competency approach to teachers training in foreign countries: theory and practice]. Kirovohrad: Imeks-LTD. p. 77.

1. The experience of the EU countries in developing professional pedagogical competency in lecturers

Some international experience in professional training of lecturers and improvement of professional pedagogical competency were studied by such Ukrainian scholars as N. Avsheniuk, L. Diachenko, O. Ohiienko, O. Ovcharuk, L. Puhovska et al. In particular, the problem of teacher training in the UK was investigated by O. Chorna, D. Medvedovska, N. Yatsyshyn et al. The system of teacher training in France was addressed by V. Lashchykhina, T. Levchenko, N. Postryhach et al. The organization of higher teacher education in Germany was examined by B. Bazova, I. Boichevska, L. Diachenko, V. Hladush et al. Scandinavian education systems were studied by N. Andriichuk, T. Hrabovska, A. Roliak et al. The Finnish system of teacher education was justified by N. Baseliuk, K. Kovtun et al. The trends in the Belgian system of teacher education were considered by T. Kuchai, Yu. Zakaulova et al. Different aspects in professional training of lecturers were revealed by J. Buitink, K. Collins, E. Hoton, W. Hutmacher, E. Karweti, M. Mulderns, S.N. Oja et al.

In Europe, the development of teacher education is determined by the main trends characterized by the processes of internationalization, professionalization and modernization of education and targeted at competency-based approach.[3] Despite the availability of relevant documents, which contain the conceptual framework for acquiring core (basic) competencies (the European Commission's White Paper on Education and Training (1995), a Memorandum on Lifelong Learning (2000), the Europe Action Plan (2002), Commission's Action Plan for Skills and Mobility (2002), Standards and Guidelines for Quality Assurance in the European Higher Education Area (2015), etc.) and are recommended for implementation in the education systems of the EU member states, the terms and their criteria differ in each country. Therefore, there is no single approach to understanding the essence, ways and methods for shaping and developing professional pedagogical competency in the European Union.

The lack of coherence and unanimity is proved by a multi-meaning interpretation of professional competency as "in-depth knowledge", "the ability to perform relevant tasks", "the ability to apply knowledge and skills", "the adequate performance of tasks", etc.[4] It should be noted that when defining the essence of professional pedagogical competency the EU experts pay considerable attention to such qualities of lecturers as the ability to independently solve complex tasks, acquire new knowledge and skills, have a positive view of one's own personality, fruitfully communicate with students and colleagues.[5]

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[3] Bibik, N.M., Vashchenko, L.S., Lokshyna, O.I., Ovcharuk, O.V., Parashchenko, L.I., Pometun, O.I., Trubacheva, S.E. (2004). *Kompetentnisnyi pidkhid u suchasnii osviti: svitovyi dosvid ta ukrainski perspektyvy: biblioteka z osvitnoi polityky* [Competency Approach in Modern Education: World and Ukrainian Perspectives: Library for Educational Policy]. Kyiv: K.I.S.

[4] Harhai, V. B. (2004). Povyshenye kvalyfykatsyy uchytelei na Zapade: refleksyvnaia model obuchenyia [Teacher's upgrading in the West: Reflexive Learning Model]. *Pedahohyka*, 2, 72–79.

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E. Karweti states that professional pedagogical competency occupies the most important place among the main competencies of lecturers since it is directly related to the performance of professioal duties.[6] M. S. Knowles indicates that higher education must cultivate the lecturers who consider lifelong learning and application of knowledge in changing conditions as the most important abilities.[7]

Some scholars emphasize the importance of implementing professional pedagogical competency in the education systems of the EU countries through the use of competency-based approach.[8] They substantiate the interest in this problem with a number of specific issues related to social and educational trends, including the complexity in defining education principles and insufficient assessment of education organization based on competences, some problems in assessing the level of specialist competency due to improper approaches to its definition.

It must be noted that the so-called Dublin model of universal competency framework (Dublin descriptors) has become the basis for European approaches to professional pedagogical competency of lecturers: knowledge and understanding; applying knowledge and understanding; making judgments; communications; lifelong learning skills.[9]

According to the European Qualifications Framework, a modern lecturershould be able to:

- use special knowledge about critical analysis, evaluation and synthesis of new complex ideas at the cutting edge of a particular field, expand or reconsider the existing knowledge and practice in a particular area or across areas;
- study, elaborate, implement and adapt projects leading to new knowledge and new solutions;
- demonstrate good leadership skills, innovation and autonomy in work and learning in new contexts, which require solving the problems caused by a multitude of interconnected factors;
- maintain a strong interest in developing new ideas or processes and show a good understanding of learning processes;
- communicate authoritatively within the framework of a critical dialogue with specialists of equal status;
- study and reflect on social norms and relations and leadchanges in them;
- critically analyze, evaluate, synthesize new and complex ideas and make strategic decisions based on these processes;

[6] Karweti, E. (2014). Influence managerial ability of principals and factors affecting the motivation work on the performance of special-ed teacher. *Journal Educational Research*, 11 (2), 21-31.

[7] Knowles, M. S., Hoton, E. F., & Swanson, R. A. (1998). *The adult learner: the definitive classic in adult education and human resource development (managing cultural differences)* (5th ed.). Houston, TX: Gulf Publishing Company. p. 119-122.

[8] Mulderns, M., Weigel, T., & Collins, K. (2007). The concept of competence in the development of vocational education and training in selected EU member states: a critical analysis. *Journal of Vocational Education*, 59 (1), p. 67.

[9] Holubenko, O., Morozova T. (2007). Yevropeiska meta struktury kvalifikatsii dlia sfery osvity [The European goals of qualifications structure for education]. *Higher Education*, 2. p. 35-36.

- demonstrate the experience of operational interaction with the ability to make strategic decisions in a challenging environment.[10]

The UK experience in developing professional pedagogical competency is rather focused on the characteristics of pedagogical activity than personal qualities of lecturers.[11] In this regard, it was crucial to determine the most important goals of pedagogical activity, which should be achieved to meet educational requirements of professional competency. Taking into account the fact that pedagogical activity is regulated by professional standards, the Higher Education Academy and British universities have approved the UK Professional Standards Framework for Teaching and Supporting Learning in Higher Education (2011). It encompassess three dimensions in qualitative development of professional pedagogical competency in a modern lecturer: area of expertise, general knowledge, professional values with corresponding descriptors. These descriptors of professional values include the following: respect for every student; assistance to the student in obtaining higher education; use of factual data obtained from research findings on teaching and continuing professional development; understanding of the higher education context, application of professional practice.[12]

The postgraduate education system for practising educators in the UK focuses on two main areas, namely improving the existing skills and abilities of educators and building new abilities and skills based on additionally acquired knowledge. However, the selection of teaching methods depends on the aim of retraining or postgraduate education. The typology of methods involves using both commonly accepted methods (lectures, distance learning, group discussions) and special methods or pedagogical techniques,includingindividual methodologies.[13]

In order to enhance professional competency of lecturers, the Open University (UK) has been introducing online learning, which is aimed at using global and local computer networks. Interactive contacts allow lecturers to receive online advice on important issues of pedagogical practice. Thus, the following three types of courses actively use information and communication technologies (ICTs): web-enhanced courses, which provide free access to electronic services both online and offline; web-focused courses,whichinvolve using ICTs as a compulsory element of advanced teacher training; web-intensive courses, which involve full-time online learning. The above-mentioned forms of improving lecturers'competency today remain the most popular ones in higher education institutions in the UK.

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[10] Reedition. (1997). *International Standard Classification of Education*. Retrieved from www.uis.unesco.org/Library/Pages/ DocumentMoreP age.aspx?docIdValue.

[11] Oja, S.N. (2009). *Perspectives on teacher professional development*. London: Falmer Press. 119-154.

[12] Medvedovska, D.O. (2016). Osnovni kryterii yakosti vyshchoi osvity: dosvid Velykoi Brytanii [The main criteria for the quality of higher education: the experience of Great Britain]. *Pedahohichni nauky: teoriia, istoriia, innovatsiini tekhnolohii*, 4. 48–55.

[13] Chorna, O. (2010). Suchasni tendentsii pidhotovky ta pidvyshchenniia kvalifikatsii vykladachiv VNZ (na prykladi vidpovidnoho dosvidu Velykoi Brytanii) [Modern trends in training and advanced training of lecturers (based on the UK experience)]. *Scientific Notes. Series: Pedagogy*. Kirovohrad. V. Vynnychenko Kirovohrad State Pedagogical University, 88. 273-276.

German scholars consider academic, methodological, social and axiological competencies to be the components of core competencies. However, the development of professional pedagogical competency is ensured by a system of postgraduate teacher education, which is rather multilevel and multidivisional and involves two areas.[14] The first area that is advanced teacher training (Lehrerforbildung) is aimed at emhancing professional competency of lecturers so that they can introduce innovations to the education process, apply modern educational methods, enrich knowledge and practical skills in pedagogy, teaching methodology, psychology, etc. The second area that is additional teacher training (Lehrerweiterbildung) implies obtaining a new qualificayion or expanding current professional one.[15] This process is based on the principles of modularity, rational organization of the education process, interdisciplinarity and reflectivity.

It must be noted that professional training of lecturers in Germany is based on the dual system of professional education. Those individuals who wishtodo a postdoc, conduct certain educational and research activities as assistant professors at university departments. In order to teach in higher education institutions, postdoctoral researchers prepare a second habilitation thesis while temporarily working as research assistants. The complex requirements put forward for this monograph can yield novel findings needed to solve a particular problem. On average, it takes up to eight years to complete such work.

In Germany, the forms for enhancing professional pedagogical competency of practisinglecturers include advanced training courses in higher education institutions, as well as seminars and conferences.[16] There is a certain system of requirements for them: classes should be short-term andconducted not far from the residence and workplace; the problems addressed during the study should be relevantfor the higher education institution where the lecturer works; the content of classes should take into account the interests of learners and aim to solve those specific issues and problems, which mightoccur in professional activity. However, pedagogical meetings in higher education institutions, as a form for enhancing professional pedagogical competencyinlecturers, allow them to familiarize themselves with state documents on education, directives on the changes to curricula and the introduction of new learning technologies. It must be noted that teaching staff start visiting lessons when it becomes necessary to evaluate innovations in the field of teaching methods or to help those teachers who facesome problems in their practice.

Adhering to the trends of interdisciplinarity and harmonizing compulsory and optional courses are universally accepted requirements in the practice of advanced teacher training in Germany. Based on social, scientific factors and other local

[14] Ovcharuk, O. (2003). Suchasni tendentsii rozvytku zmistu osvity v zarubizhnykh krainakh [Modern tendencies in the development of the content of education in foreign countries]. *Shliakh osvity*, 2. p. 9.

[15] Hladush, V.A. (2012). Osoblyvosti pisliadyplomnoi osvity pedahohiv spetsialnykh navchalno-vykhovnykh zakladiv u rozvynenykh krainakh Yevropy [Features of postgraduate educational of teachers of special educational institutions in developed European countries]. *Topical issues of collectional educational*, 3. 46-55.

[16] Stern. (2001). Die besten Hochschulen in Deutschland. *Stern,* 17, 57-68.

conditions, some German universities (Hamburg, Heidelberg, Goettingen, Osnabruck) determine the level of the necessary professional training forlecturers, analyze the expediency of introducing compulsory and optional courses for retraining, as well as relevant teaching methods and integrated programmes in postgraduate education.[17] However, it is rather important to use such innovative teaching methods as situation simulation, training sessions, case method, project method, mental maps whenenhancing professional pedagogical competency in lecturers.[18]

The conducted analysis of scientific works shows that relevant organizational and pedagogical conditions taking into account the specifics and characteristics of professional activity in higher education contribute to developing professional pedagogical competency in lecturers in higher education institutions in Germany.

In contrast to German researchers, Austrian experts in education substantiate the following core competencies: subject-specific competency (mastering and application of knowledge, critical reflection); personal competency (development of individual skills, self-analysis); social competency (responsibility, activity); communicative competency (communication skills); methodological competency (autonomy, flexibility, purposefulness in learning). It is in the context of developing these competencies that Austrian experts can observe the enhancement of professional pedagogical competency.[19] However, the following aspects of Austrian experience in teacher training are considered to be the most innovative ones: diversification (multidisciplinary) and hybridization of teacher education, the country's clusterization in reforming teacher education, tutoring.[20]

The development and implementation of national qualification standards based on common requirements for professional training and professional development of teaching staff is characteristic of teacher education in France. Diplomas with qualifications are awarded to the candidates who acquired certain knowledge within the defined standards for professional pedagogical competency. Rather interesting is a modern model for professional training and development of teaching staff in France. The main essential characteristic of such a model is a concentrated approach to developing professional pedagogical competency of lecturers through the use of communication (dialogue-based) exercises, analysis of pedagogical situations, discussions, experimental exercises.[21] Projects presentation, demonstration of

[17] Chulkova, L.V. (2006). *Problemy raboty prepodavateliia v VNZ Hermanii* [Problems in the work of lecturers in German higher educational institutions]. Berdiansk: Modem.

[18] Bauer, K.-O., Kopka, A., Brindt, S. (2006). *Pädagogische Professionalität und Lehrerarbeit*. Weinheim und München.

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[20] Avsheniuk, N.M., Desiatov, T.M., Diachenko, L.M., Postryhach, N.O., Pukhovska, L.P., Sulyma O.V. (2014). *Kompetentnisnyi pidkhid do pidhotovky pedahohiv u zarubizhnykh krainakh: teoriia ta praktyka* [Competency approach to teachers training in foreign countries: theory and practice]. Kirovohrad: Imeks-LTD. p. 11.

[21] Lashchykhina, V. P. (2009). *Rozvytok systemy pidhotovky pedahohichnykh kadriv u Frantsii (druha polovyna XX – pochatok XXI stolittia)* [Development of the training system for teaching

educational films, modeling, problem-based methods, role-playing games, micro-teaching are widely used, too.

In France, postgraduate teacher education is an integral part of professional retraining system for lecturers. It has undergone several stages in its development. Since 1982, MAFPEN (Les Missions Académiques de Formation des personnels de l'Education Nationale), a network of new institutions, has started to be established in every academy as a result of the state policy of the Government of the French Republic with the aim to retrain teaching staff for the national education system. The main task of these institutions was to analyze the current needs of educational institutions ensuring training, retraining and professional development of teaching staff by studying the possible potential and resources of the academies themselves.[22]

In this case, the advantages of postgraduate professional training for lecturers in France can be attributed to increasing the availability of new higher-ranking posts; assisting lecturers in performing functional duties at a high professional level; preparing them for administrative competitions; helping them to introduce new teaching methods and techniques in the educational process of higher education; contributing to improving the existing knowledge and acquiring new one aimed at personal and professional growth of lecturers.

In this regard, one should pay particular attention to the personal motivation of French teachers towards enhancing their professional development. The peculiarity of French postgraduate education consists in the fact that the Ministry of National Education, Research and Technology resort to mass events, similar to advanced training in Ukraine, only in some cases.[23] An example may be the need for simultaneous retraining of lecturers specializing in a certain area after implementing significant changes in the curriculum.

A slightly different approach to defining the essence of competencies and competence-oriented education is employed by Belgian scholars. Core competencies developed during the education process are social competencies, a positive attitude to external social environment, independent thinking and performance, motivational competencies, mental mobility, functional competencies.[24] Belgian experts associate professional pedagogical competency with such criteria as multifunctionality (achieving specific goals, performing various tasks, solving problems), multidimensionality (interconnected combination of knowledge, views, skills and relations), transparency (the possibility of use in different situations), availability (taking into account different content volumes).

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staff in France (second half of the XX – XXI century)]. Candidate's thesis. Kyiv: Kyivskyi natsionalnyi linhvistychnyi universytet.

[22] Evolution du dispositif de formation continue des enseignants du des conseillers principaux d'éducation. Retrived from: http:eduscol.education.fr/D0031/FXNREF03.htm.

[23] Korsak, K.V., Hraniuk, L.O. (2001). Frantsiia: pisliadyplomna osvita ta ii dosiahnennia [France: postgraduate education and its achievements]. *Postgraduate Education in Ukraine*, 1. 28-31.

[24] OECD. (2011). *OECD reviews of evaluation and assessment in education: school evaluation in the Flemish community of Belgium*. Retrieved from https://www.oecd-ilibrary.org/education/oecd-reviews-of-evaluation-and-assessment-in-education-belgium-flemish-community-2011_9789264116726-en.

In the Netherlands, professional pedagogical competency of lecturers is closely related to defining the major educational goals, including the development of the lecturer's personality, his/her adjustment to new requirements of the education process. Taking as a basis Dutch theorists and educators' suggestion about how to define core competencies in accordance with the requirements of different stages in the individual's life, the following competencies necessary for achieving professional growth were identified: content competencies (necessary for competitiveness in the national and European labour market); competencies necessary for a career (technological competency, operational skills, etc.); competencies necessary for acquiring new skills (basic, analytical abilities and skills).[25]

This suggestion also affects the list of requirements for professional pedagogical competency of lecturers, namely self-directed study abilities; confidence and ability to choose an area for development; ability to solve problems, apply different options, collaborate with colleagues and discover creative solutions; ability to acquire new skills effectively.

It can be argued that modern theoretical developments in Denmark urge to search for new models in the development of professional pedagogical competency of lecturers. Scientific researches are aimed at studying the ways to deepen the connection between theory and practice in the process of professional pedagogical growth. The main pedagogical functions related to developing this competency were determined as follows: the deepening of lecturers' professional thinking with an emphasis on pedagogical reflection, self-analysis, a harmonious combination of critical and creative understanding of the principles for effective pedagogical activity. After studying educational problems in Denmark, J. Buitink[26] substantiated the role of practical knowledge in professional growth of the lecturer, which allow him/her to understand any pedagogical situation and take an informed decision instantly, to apply critical thinking skills based on knowledge and experience.

Finnish experts' views on core competencies significantly differ from those common in most European Union countries. They believe that core competencies should include: cognitive competency (theoretical knowledge, practical skills); ability to apply knowledge and skills under the conditions of social change; social competency (ability to cooperate and prevent conflicts, mutual understanding, social adaptability); personal competencies; creative competencies (innovative activity); communicative and pedagogical competencies; administrative competencies; strategic competencies; ability to act in parallel in different fields of activity. In Finland, the development of professional pedagogical competency is incorporated in university curricula as a component of the higher education standard.[27] This process

[25] Swiss Federal Statistical Office. (2001). *Country Contribution Process: Summary and Country Reports*. Briefing materials prepared for DeSeCo's 2nd International Symposium. Neuchâtel, Switzerland: Various Authors. (CCP Reports). pp. 255–260. Retrieved from http://www.statistik.admin.ch/stat_ch/ber15/deseco/deseco_country.htm.

[26] Buitink, J. (1992). Research on teacher thinking and implications for teacher training. *European Journal of Teacher Education*, 16 (3), 195–203.

[27] Hutmacher, W. (2008). *Que tiene de mas el sistema educativo finlandes?* Retrieved from https://socialescepcor.wordpress.com/2008/11/29/walo-hutmacher-%C2%BFque-tiene-de-mas-el-sistema-educativo-finlandes/.

mainly involves mastering procedural, motivational, semantic components of pedagogical activity, the logic of academic subjects, ability to operate concepts representing the conceptual framework of pedagogy, ability to transform the foundations of pedagogical theory into methods of cognitive activity, acquisition of self-directed study and professional development skills, business communication.[28]

2. Developing professional pedagogical competency in lecturers in the context of the US and Canadian experience

Under the conditions of updating the education system in Ukraine, relevant working groups should consider the US experience in developing professional pedagogical competency in lecturers. It presents the ways forenhancing the quality of this competency, which involves retraining of lecturers aimed at searching for relevant knowledge, skills and abilities, optimizing moral and psychological readiness for professional activities in higher education institutions.

Such Ukrainian scholars as M. Krasovytskyi, V. Luniachek, N. Prykhodkina, O. Romanovskyi, S. Stepanenko, O. Stoiko and I. Zvarych studied various aspects of lecturers' professional development and the US experience in forming pedagogical competency in educators. The Canadian system of professional pedagogical development for educators was analyzed by R. Hurevych, N. Mukan,H. Voronkaet al. Considerable attention is paid to the foreign experience of lecturers' professional development in postgraduate education, in particular in the USA, Canada, Japan and China. It must be noted that V. Oliinyk, G. Kaposlz, S. Katunska, N. Kliasen and S. Synenko devoted their studies to this problem.

One should pay particular attention to the works of US scholarson the ways forenhancing professional training of educators and their competency (K. Eble, A. Eraut, E. Hoton, M. Knowles, P. Seldin, L. Spencer, S. Spencer, R. Swanson, C. Weinsteinet al.).The current research also takes into consideration those works, which reveal the importance of increasing the lecturer's potential in a modern higher education institution, as well as the level of the necessary professional pedagogical competency(F. Delamare-Le Deist, L. Holmes, D. McClelland, J. Raven, E. Stringfellow, J. Winterton et al.).

It must be noted that theoretical and practical studies on professional pedagogical competency of lecturers in the United States are widely represented in research and pedagogical literature. M. Knowles states that today's higher education today should prepare such educators, who strive for lifelong learning and are able to apply their knowledge under the rapidly changing conditions.[29]

L. Spencer and S. Spencer believe that professional pedagogical competency is abasic characteristic of lecturers, which determines the effectiveness of their activities according to specific criteria of higher education.[30] The qualities, which underlie

[28] Virolainen, M., & Stenström, M.-L. (2015). *Recent Finnish VET reforms and innovations: tackling the current challenges*. Retrieved from http://nord-vet.dk/indhold/uploads/report1c_fin.pdf.
[29] Knowles, M. S., Swanson, R. A., Hoton, E. F. (1998). *The Adult Learner: The Definitive Classic in Adult Education and Human Resource Development (Managing Cultural Differences)*. Houston, TX: Gulf Publishing Company. pp. 113-122.
[30] Spencer, L.M., Spencer, S.M. (1993). *Competence at Work: Models for Superior Performance*. New York: John Wiley & Sons, NY.

these competencies, imply knowledge, skills, motives, psychophysiological characteristics and the self-concept.

A. Eraut also pays specific attention to the features of professional pedagogical competency of American educators. In his work[31] he indicates such features include the active introduction of alternative forms and programmes,which provide flexible conditions for professional growth, meet individual needs, promote continuing professional development and correspond to the realities of pedagogical practice in higher education. Defining professional pedagogical competencies, A. Eraut highlights their general character and broader understanding in comparison with the qualifications.

US scholars believe that the components of professional pedagogical competency as requirements foreducators are based on the five main aspects: general outlook; basic skills; knowledge of the subject they teach; knowledge of pedagogy, psychology and philosophy; pedagogical skills.[32] K. Eble and W. McKeachie state that the process of developing lecturers' professionalism involves deepening their knowledge about teaching theory, improving professional skills and abilities, shaping professional consciousness and pedagogical motivation of personality, awareness of the need for constant self-improvement.[33]

Some scholars point out that the USA has been introducing the experiments aimed at changing methods and forms for developing professional pedagogical competency in lecturers. The focus of such experiments lies in attempting to change the traditional model "the professor speaks – the student listens" so that learning is based on more active types of independent work rather than traditional passive forms (lectures, seminars).Since the Internet provides access to many scientific sources of information, it becomes obvious that a traditional lecture, as the prevailing form of learning, has ceased to satisfy both students and lecturers. In this context, P. Seldin considers the main components of effective teaching to be deep knowledge of the subject, clear presentation of the material, active involvement of students in the learning process, cultivation of their cognitive activity, etc.[34]

Consequently, the complexity of training modern lecturers in postgraduate education in the USA is logical. It takes them from 3 to 5 years to do aPhD basedon a master's degree. Differences in doctoral studies depend on the specifics of research work, general and professional exams, which are taken mainly during the first two years of study. Only after completing this level of higher education, onecan obtain a PhD.

The normative basis for advanced training and professional development of educators in the US system of postgraduate education consists of national standards developed in 2001 by the National Staff Development Council. They determine the content, types and forms of advanced training for lecturers. According to these standards, the content of educators' professional development covers the problems of education transparency; teaching quality; evaluation objectivity; cooperation between

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[31] Eraut, A.M. (1995). *Developing professional knowledge. New paradigms and practices in Professional development*. New York: Teachers College Press. pp. 227-252.

[32] Weinstein, C.E., Wittrock, M.C., Mayer, R.E., (1996). *The teaching of learning strategies*. Handbook of research on teaching. New York: Macmillan. pp. 315-327.

[33] Eble, K. E., McKeachie, W. J. (1986). *Improving Undergraduate Education Through Faculty Development*. San Francisco: Jossey-Bass.

[34] Seldin, P. (1993). *Successful Uses of Teaching Portfolios*. Bolton M.A.: Anker.

participants in the educational process; knowledge about social environment; creation of opportunities to study the main mechanisms for involving the public in activities of educational institutions in order to improve the educational process.[35]

It must be noted that the system of advanced training for lecturers has generated the movement, titled "Faculty Development Programs". The reasons behind it were rather objective, including the failures of traditional teaching methods, lack of professional communication skills andthe growing needs of students. Within the framework of this movement, hundreds of colleges and universities engagefreely in ensuring advanced training of lecturers. This is confirmed by the fact that every third US citizen enrolled on programmes for professional development and advanced training in 1988. [36]. The main forms of work in special departments or higher education institutions are workshops; methodical management of novice or junior lecturers; conferences on the improvement of higher education, etc.

The national centres, which aim to coordinate activities of the US pedagogical community towards advanced training, creating and implementing professional pedagogical training programmes for lecturers today, are the following: American Association of Higher Education; Association of American Colleges&Universities; Council of Graduate Schools) and other professional organizations. Some educators believe that the forms of advanced training include various courses (day/evening, full-time/part-time, long-term/short-term, Saturday/Sunday, summer/inter-semester, etc.), which are conducted at research centres and consulting firms based on theoretical and practical programmes. In the USA, some higher education institutions coordinate the activities of intensive summer schools, which can last from 1-2 weeks to 3 months.[37]

In her work N. Prykhodkina considers the following forms of advanced training and development of professional pedagogical competency inlecturers in the USA: conferences for young lecturers (e.g. The New Faculty Orientation Program); seminars on general theoretical issues of higher education pedagogy, the psychology of adult education, traditional and innovative teaching methods, etc.; workshops, which combine the elements of pedagogical theory and practice; individual consultations with educators, psychologists and sociologists on teaching issues; interactive discussions and "roundtable discussions" between lecturers and postgraduate students on specific learning problems; reciprocal visits and observations; mentoring; a portfolio for evaluating the lecturer's activities and self-analysis and self-evaluation; summer schools and institutes on college teaching; conferences (national, regional, interinstitutional, etc.) for different categories of employees.[38] The mentioned forms and methods of advanced training for lecturers in the USA are, on the one hand, a modern effective means of enhancing professional

[35] Nisimchuk, A.S., Padalka, O.S., Shpak, O.T. (2000). Suchasni pedahohichni tekhnolohii [*Modern pedagogical technologies*]. Kyiv: Prosvita. 103-104.

[36] Carnevale, A.P. (1989). The Learning Enterprise. *Training and Development Journal*. February. p. 26.

[37] Eraut, A.M. (1995). *Developing professional knowledge. New paradigms and practices in Professional development*. New York: Teachers College Press. pp. 227-252.

[38] Prykhodkina, N. (2013) Osoblyvosti profesiino-pedahohichnoi pidhotovky vyklacha vyshchoi shkily SShA u systemi pidvyshchenniia kvalifikatsii [Features of professional and pedagogical training of lecturers in the USA in system of training]. *New pedagogical thought*, 3, 115-118.

pedagogical competency and, on the other hand, prove thatUSlecturers strive to meet the constantly changing requirements.

Given that professional development of lecturers is based on the principle of "teacher education as a lifelong process", the Canadian system of teacher education relies on professional pedagogical competency, the shift from teacher education to pedagogical activities, the integration of theory and practice, the understanding of multicultural educational environment.[39]

Taking into account the programme "Definition and selection of competencies: theoretical and conceptual foundations" designed at the 1997 Initiative of the experts from the Organization for Economic Co-operation and Development (OECD) and with the participation of the National Center for Education Statistics of the USA and Canada, some Canadian scholars (E. Gillese, M. Lennon, P. Mercer, H. Murray, M. Robinsonet al.) consider professional pedagogical competency of lecturers to be not only knowledge of the subject being taught (content competency), but also pedagogical knowledge and skills, which include choosing effective methods for teaching educational material, communication, providing opportunities for practice and feedback, ability to interact with different students.[40] However, special attention is paid to the features of professional pedagogical competency. They include outlining pedagogical tasks based on the subject being taught; specifying the goals of special subjects; using various types and methods of educational monitoring; ability to plan, organize and monitor both the educational process and one's own professional activities in order to achieve the expected results.

Some Canadian scholars indicate that each component of professional pedagogical competency is based on the combination of qualities, which can be mobilized for active professional pedagogical activity, namely practical skills, cognitive interests, emotions, the value of knowledge, abilities, behavioural components, etc. The TeachingQualityStandard states that every educator is obliged to prepare a plan for individual professional development. One of the ways of such development for Canadian educators is to improve professional skills aimed at ensuring the compliance of professional pedagogical competency with state standards of Departments / Ministries of Provincial Education.[41]

Given the fact that education problems in Canada fall within the exclusive jurisdiction of ten provinces, there are various institutions involved in enhancing professional skills of educators: universities (bachelor, master and doctoral programmes, education certification programmes); departments of education (managing the development of the national educational policy); regional centres for education (analyzing the current status of the teaching profession); school councils (days of voluntary and compulsory professional development); volunteer subject associations; teachers' unions; private providers of services for professional

[39] Mukan, N.V. (2006).[The system of professional training for future secondary school teachers at Canadian universities]. *Extended abstract of candidate's thesis*. Kyiv. p. 13.

[40] Murray, H., Gillese, E., Lennon, M., Mercer, P., Robinson, M. (1996). *Principles in University Teaching*. Society for Teaching and Learning in Higher Education.

[41] The Development of education in Canada. *Report of Canada. The Council of Ministers of Education*. (2001). Geneva, 5-8. Sept.

pedagogical development. In order to provide access to opportunities for professional pedagogical development, teachers associationsdesignprogrammes for advanced training, professional development and organize committees on the professional development of educators. However, every association has a department of professional development, whose task is to study the process of improving the professional skills of educators anddesigning practical programmes.[42]

Adult education serves as a continuation of professional teacher education for teachers and lecturers at education faculties of universities. It implies a year-long full-time study consisting of pedagogical and non-pedagogical courses(30 credits). Pedagogical courses (24 credits) acquaint students with the problems of adult education development, adult learning management, the psychology of activity and teacher education, teacher placement, etc. Non-pedagogical courses (6 credits) are focused on ethics and rights of pedagogical activity.

In Canada, postgraduate teacher education institutions, as part of the system of advanced training and retraining, offer different modes of study: advanced training courses, interactive training in small groups, centres for distance learning, etc.[43] There are special establishments aimed at developing professional pedagogical competency and solving the professional needs of educators by means of distance learning. They are the Virtual Teacher Center, established in 2001 by the collective decision of Faculty of Education of Memorial University; Newfoundland and Labrador Teachers' Association, Department of Education, The Centre for Distance Learning and Innovation of the Newfoundland and Labrador School District. They allow educators todevelop professionally according to their own schedule.[44]

The professionalism of lecturers in Canada can be enhanced due to the use of various teaching methods in postgraduate teacher education institutions, including role-playing and business games, training sessions, dialogues and discussions, projects, case studies, etc.

Conclusions

The study of foreign experience is one of the important conditions for the successful implementation of challenges, which the higher education system of Ukraine and the system of advanced teacher training are currently facing. The evaluation of lecturers' professional pedagogical competency at various stages of their professional career is one of the important areas of higher education. As a result, many countries have created reasonably stable systems for evaluating educators' readiness for pedagogical activity. Therefore, the systems of advanced trainingin these countries and, especially, traditions and search for new forms, methods and content are worthy of studying.

The conducted analysis of the leading foreign experience in developing professional pedagogical competency in lecturers presents its following features:

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[42] ibid

[43] Voronka, H. (2005). Dodyplomna I pisliadyplomna osvita v Kanadi ta Velykii Brytanii: pliuralizm dumok [Undergraduate and postgraduate education in Canada and the UK: the pluralism of the educational process]. *Higher Education*, 4, 56-60.

[44] Hickey, A. *The Virtual Teacher Centre: An Online Learning Community*. Retrieved from http://www.ctffce.ca/publications/pd_newsletter/PD2003_Volume34English_Article4.pdf.

- a clear focus of the state policy on the development of educators' potential;
- the legal and regulatory framework aimed at supporting and integrating professional development of educators;
- a high level of organizational and methodological support of professional development programmes for educators with clear guidelines and results of implementation.

The study of trends in the development of professional pedagogical competency in lecturers in the scientific and educational space of the EU countries, the USA and Canada proves that this practice is formed taking into account economic, political and sociocultural characteristics. The analysis of research and pedagogical literature shows that the development of professional pedagogical competencyin lecturers is determined by a dynamic, multifaceted and meaningful interpersonal process, which results in changes in its intellectual, motivational, emotional, volitional and activity spheres, life and professional positions.This is the path to developing creative personality, forming susceptibility to pedagogical innovations and the ability to adapt in a rapidly changing pedagogical environment.

Abstract

The research deals with the trends in developing professional pedagogical competency of lecturers in the scientific and educational space of the leading EU countries, the USA and Canada. It is emphasized that professional pedagogical competency occupies the most important place among the main competencies of the lecturer as it is directly related to performing professional duties. Specific attention is paid to the analysis of the approaches to determining core competencies required for professional growth, as well as components and criteria for developing professional pedagogical competency in the education systems of the UK, Germany, France, Austria, the Netherlands, Dennmark, Finland. It is highlighted that despite the availability of relevant documents in an integrated Europe, which contain the conceptual framework for acquiring core (basic) competencies, the terms and their criteria differ in each country. It is indicated that in the European Union there is no single approach to understanding the essence, ways and methods for shaping and developing professional pedagogical competency. It is clarified that when defining the essence of professional pedagogical competency the EU experts pay considerable attention to such qualities of lecturers as the ability to independently solve complex tasks, acquire new knowledge and skills, have a positive view of one's own personality, fruitfully communicate with students and colleagues. The system of advanced training for teaching faculty is rather important in the context of American and Canadian lecturers' professional development. The legal basis of advanced training and professional development of teaching faculty in the system of the US, Canada postgraduate education is determined. The bases, various forms and programmes for professional development and enhancement of professional pedagogical competency of the lecturer are analyzed. It is concluded that the development of professional pedagogical competencyof the lecturer in the United States is determined by a dynamic, multi-faceted and meaningful interpersonal process, resulting in the changes in his/her consciousness, self-awareness, intellectual, motivational, emotional, volitional and active spheres, life and professional positions; that is there occurs a holistic professional self-development. The current research made it possible to prove a clear orientation of these countries'

state policy towards developing the potential of lecturers, the availability of legal foundations required to ensure support and integrity of lecturers' professional development, a high level of organization and methodical support of the programmes for lecturers' professional development, which are characterized by clear goals and expected outcomes.

Key words: professional and pedagogical competency, core competencies, teacher of higher educational establishment, professional development, system of training, the European Union, the USA, Canada.

Streszczenie

W badaniu rozpatrzono tendencje rozwoju kompetencji profesjonalno-pedagogicznej wykładowców w przestrzeni naukowo-edukacyjnej krajów Unii Europejskiej, USA oraz Kanady. Podkreślono, że kompetencja profesjonalno-pedagogiczna zajmuje najważniejsze miejsce wśród podstawowych kompetencji nauczycieli akademickich, ponieważ bezpośrednio jest związana z pełneniem obowiązków zawodowych. Szczególną uwagę zwrócono na analizę podejść do określenia pakietów podstawowych kompetencji koniecznych dla rozwoju profesjonalnego, również komponentów oraz kryteriów rozwoju kompetencji profesjonalno-pedagogicznej w systemach edukacyjnych UE. Podkreślono, że mimo istnienia w zintegrowanej Europie właściwych dokumentów, które definiują założenia konceptualne dotyczące podstawowych kompetencji, określenia oraz je kryteria w każdym kraju się różnią. Stwierdzono, że w warunkach przestrzeni Europejskij do dzisiaj nie istnieje rozumienie istoty, sposobów oraz metod formowania i rozwoju kompetencji profesjonalno-pedagogicznej, przy określeniu której uwagę ekspertów zwrócono na takich cechach wykładowcy jak umiejętność samodzielnie znaleźć sposoby rozwiązania zadań kompleksowych; samodzielnie uzyskać nową wiedzę, umiejętności; mieć pozytywny pogląd na własną osobistość; możliwość harmonijnie komunikować się ze studentami i w zespole. Ujawniono osobliwości rozwoju profesjonalnego amerykańskich i kanadyjskich nauczycieli akademickich, wśród których główne miejsce zajmuje system podniesienia kwalifikacji pracowników pedagogicznych. Określono podstawy normatywne podniesienia kwalifikacji oraz rozwoju profesjonalnego pedagogów w systemie oświaty podyplomowej USA i Kanady, przeanalizowano bazy, rozmaite formy i programy podniesienia kwalifikacji oraz udoskonalenia kompetencji profesjonalno-pedagogicznej wykładowców. Stwierdzono, że rozwój kompetencji profesjonalno-zawodowej nauczycieli akademickich USA cechuje się dynamicznym, wielostronnym procesem wewnętrznym samorozwoju profesjonalnego, w rezultacie którego zachodzą zmiany w jego świadomości, samoświadomości, intelektualnej, motywacyjnej, uczuciowej, i czynnej dziedzinach, postawie życiowej oraz zawodowej. Dokonane badanie pozwala stwierdzić precezyjny kierunek polityki państwowej tych krajów na rozwój potencjału nauczyciel akademickich; istnienia bazy prawnej dla zabezpieczenia poparcia oraz integracji rozwoju profesjonalnego pedagogów; wysoki poziom zabezpieczenia organizycyjno-metodycznego rozwoju profesjonalnego pedagogów z precezyjnymi punktami orientacyjnymi oraz rezultatami realizacji.

Słowa kluczowe: kompetencja profesjonalno-pedagogiczna, podstawowe kompetencje, nauczyciel akademicki, rozwój profesjonalny, system podniesienia kwalifikacji, Unia Europejska, USA, Kanada.

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Professional and pedagogical mobility of a future lecturer at a higher education institution in conditions of a magistracy: didactic principles of modeling and methodical principles of formation

Formulation of the problem

Reforming the education system of Ukraine in the conditions of its integration into the European educational space places higher demands on the professional activity of teaching staff of educational institutions. Thus, the main goal of the key reform of the Ministry of Education and Science – the new Ukrainian school is the creation of a school in which it will be a pleasure to study and which will give students the knowledge and skills to apply them in life[1], which involves the involvement of skilled pedagogical staff.

This is happening against the backdrop of crisis in the economy, which manifests itself in the outflow of highly skilled personnel from the education system to other sectors of the economy – for positions with higher salaries, and abroad.

However, this situation opens opportunities for the employment of future lecturers, which are being prepared by modern educational programs in higher education institutions of Ukraine.

There are requirements established by the current legislation for future pedagogical workers. Persons who are «physical and psychological state allows for pedagogical activities and who have an educational and / or professional qualification corresponding to the established legislation, in particular a professional standard (if available), qualification requirements for corresponding positions of pedagogical workers» are accepted for these positions.[2]».

It should be noted that the professional qualification of a pedagogical worker is recognized in the established procedure and certified by the relevant document, a standardized set of competencies (results of studies) acquired by a person that enable them to carry out professional pedagogical activities.

It should be recalled that the «traditional» training (retraining) of persons with basic non-pedagogical education envisaged their training at the undergraduate degree

[1] Нова українська школа [Електронний ресурс]/ Міністерство освіти і науки України. Url: https://mon.gov.ua/ua/tag/nova-ukrainska-shkola (дата звернення: 30.05.2019).

[2] Вимоги до освіти та професійної кваліфікації педагогічного працівника закладу освіти Стаття 58 / Про освіту: Закон України від 05.09.2017 р. № 2145-19 [Електронний ресурс] // Відомості Верховної Ради (ВВР), 2017, № 38-39, ст. 380. URL: http://zakon2.rada.gov.ua/laws/show/2145-19/page (дата звернення: 12.05.2019).

(in full or in short terms) in pedagogical specialties, and then, as a rule, in the master's degree.

However, due to the possibility to enter the pedagogical specialty according to the rules of the cross-entry, studying in the magistracy acts on the territory of Ukraine as the leading form of training of future lecturers.

The rules of cross-entry include the possibility of admission to a magistracy for a pedagogical specialty (or other specialty whose educational program provides for the award of a professional qualification of a lecturer) of persons with non-pedagogical education on the condition of successful completion of entrance examinations in professional disciplines and foreign languages.

The peculiarities of the training of future lecturers in the magistracy are: relatively short terms: 1,5-2 years (which leads to the mastering of fewer psychological and pedagogical disciplines in comparison with the bachelor's degree); the stationary form of training is limited to the number of class hours per week; on the correspondence form of training can be studied persons without practical experience in educational institutions.

In these conditions, their professional and pedagogical mobility is an important criterion for the professional activity of future lecturers.

The professional and pedagogical mobility of the future lecturer, according to our definition, is the integrative quality of the individual, which allows combining theoretical and practical readiness for the implementation of pedagogical activity, to be socially active, competitive, professionally competent (have a solid knowledge of the chosen specialty), adaptive, capable of self-realization, self-development, self-education, creativity in the conditions of acquiring a pedagogical specialty and modernizing their own professional activities as a strategic goal of life.

Therefore, the formation of professional and pedagogical mobility of a future lecturer in a master's degree is relevant.

1. Professional-pedagogical mobility as a leading form of mobility in the preparation of a future lecturer

Mobility throughout history was a quagmire of humanity. Modern scientific research is devoted to various types of mobility: professional, social, labor, personal, cultural, educational, intellectual, communicative, informational (virtual), intellectual, mathematical, academic, parasitic, etc.

The formation and development of an industrial society, accompanied by industrial revolutions (1st: mid of the XVIII century – 1st half of the XIX century.; 2nd: half of the XIX century – the beginning of the XX century.) has attached special importance to professional mobility, which should become one of the leading principles of modern professional education, based on the classical principles of fundamentalism, scientific, systematic, professional-subject orientation [3].

Dictionary «Professional education» determines professional mobility as «the ability to quickly change the type of work, switch to another activity due to changes in technology and production technology. Professional mobility is manifested in the

[3] Горюнова Л.В. Профессиональная мобильность специалиста как проблема развивающегося образования России : автореф. дис.... д-ра. пед. наук : 13.00.08. Ростов н/Д, 2006. С. 7 [44 с.]

possession of a system of generalized methods of professional work and their application for the successful completion of any task in the technology related areas of production. Provides a high degree of development of generalized professional knowledge, as well as readiness for the operative selection and implementation of optimal methods for performing production and technical tasks»[4].

Professional mobility is the quality necessary for a successful life of a person in a modern society [5].

At the same time, the formation of a post-industrial (informational) society has led to an acceleration of the processes of disappearance, of filling new content and the emergence of new occupations in the labor market, characterized by unpredictable dynamics due to crisis phenomena. Therefore, old competencies (competencies) are often unnecessary, which is why there is a constant need to acquire new knowledge and skills. This leads to qualitative changes in the professional activities of representatives of traditional professions in the field of education: lecturers, lecturers, etc.

All this contributes to increasing the mobility of the population, with the trajectories of «modern» mobility different from the trajectories of the past centuries, when professional training took place simultaneously with socialization and did not require further retraining[6].

This leads to the need for studies of combined types of occupational mobility, namely, professional and educational in the field of education.

The structure of professional and pedagogical mobility is flat and personal components. The first determines the success of the professional activity of the future lecturer, the second one – the success of his as a person in this professional activity. It should be noted at once that such an interpretation of the lecturer's success corresponds to the structure of our proposed model for the formation of professional and pedagogical mobility but is somewhat arbitrary.

2. Model of formation of professional and pedagogical mobility of the future lecturer.

The implementation of the author's concept of the study envisaged the following stages of the study: theoretical-target, organizational-methodical, control and productive.

Formation of professional and pedagogical mobility of the future lecturer requires constructing the appropriate model.

Pedagogical simulation of the professional activity of future lecturers, as pointed out by A. Teplytska, takes place in the following sequence: «putting forward ideas, formulating assumptions about the expected results; selection of the main directions

[4] Професійна освіта : словник : навч. посіб. для учнів і пед. працівників проф.–техн. навч. закл./ за ред. Н. Г. Ничкало АПН України, Ін–т педагогіки і психології проф. освіти. – К.: Вища шк., 2000. С. 194 [381 с.]

[5] Сушенцева Л. Вплив професійної мобільності на конкурентоздатність фахівця на сучасному ринку праці. *Молодий вчений*. 2016. №4(31). С. 570 [С. 568 – 572].

[6] Каплина С. Е. Концептуальные и технологические основы формирования профессиональной мобильности будущих инженеров в процессе изучения гуманитарных дисциплин : автореф. дис. … д-ра пед. наук : 13.00.08. Чебоксары, 2008. С. 3 [48 с.]

of system modeling based on the analysis of previous educational models; construction of the model in accordance with the leading ideas and values of the personally oriented learning paradigm; structuring *«subject / object of research» (generalized by us – O. I.)*; definition of the main components of the methodical system of formation «*subject / object of research» (generalized by us – O. I.)*; specification of the main components in accordance with the criteria of the expected result; implementation of the stages of the methodical system for continuous diagnostics, analysis and correction of the modeling pedagogical process»[7].

Depending on the provisions of the author's concepts, the researchers identify the various stages of the formation of professional mobility (and its types): «motivational-adaptive, professional-oriented, professional-activating, transformational-practical»[8], «motivational-adaptive, content-cognitive, practical-productive»[9], «initial, practical, integration, system-generalization)»[10] etc.

The model of the formation of professional and pedagogical mobility is structurally functional and can be conditionally attributed to the institutional (block).

Structural-functional model of formation of professional and pedagogical mobility – Fig. 1, reflects the interconnection and interdependence of such blocks: purposeful, methodological-procedural, substantive-procedural, effective.

Consider this block in detail.

1. The purpose of the model is the formation of the professional and pedagogical mobility of a future lecturer in a master's degree (*target block*).
2. The methodological and procedural block contains information on the principles / approaches used for the formation of professional and pedagogical mobility (its components).

Thus, according to the results of our research, the formation of the personal component of professional and pedagogical mobility is associated with the use of such principles: consciousness of learning; activity and independence; the unity of educational, developmental and educational functions of teaching (general didactic), humanization of education and acmeology (specific).

Formation of the activity component is due to the use of such principles: accessibility; thoroughness; systematic and consistent; communication studies with practical activities (general-didactic), continuity of education; modules of learning content (specific). Formation of two components of professional and pedagogical

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[7] Теплицька А. О. Модель і моделювання в професійній освіті майбутніх учителів. *Духовність особистості: методологія, теорія і практика.* 2015. Вип. 6. С. 186. [С. 181-191]. URL: http://nbuv.gov.ua/UJRN/domtp_2015_6_22 (дата звернення: 17.05.2019)

[8] Гордєєва Т. Є. Педагогічні умови формування професійної мобільності майбутніх соціальних працівників : автореф. дис. к. пед. наук : 13.00.04. Переяслав-Хмельницький, 2015. С. 8 [20 с.]

[9] Мерзлякова Н.С. Формирование профессиональной мобильности будущего инженера средствами поликультурного образования: автореф. дис.... к. пед. н. : 13.00.08. Оренбург, 2012. С. 11 [23 с.]

[10] Сачук Ю. Є. Формування соціально-професійної мобільності майбутніх викладачів інформатики у процесі магістерської підготовки : автореф. дис. к. пед. наук : 13.00.04. Дніпро, 2017. С. 10 [20 с.]

mobility is connected with the use of the principles of visibility (general-didactic) and mobility and coevolution (specific).

Therefore, it is necessary to use personal-activity, competence, event, synergetic, systemic, axiological, humanistic-oriented (humanistic) approaches.

3. In the *content-process unit* are described: a) the structure of professional and pedagogical mobility; b) forms / methods / means / contents of methodical work; c) innovative technologies for the formation of professional and pedagogical mobility; d) Pedagogical conditions determined by the author that allow forming professional and pedagogical mobility.

a) According to the results of our research, the structure of professional and pedagogical mobility is a flat and personal component. Activity component (AC) is determined by professional, pedagogical, design and psychological competencies. Personal component (PC) is determined by motivational, reflexive, adaptive and creative competencies[11]. We have analyzed the essence of these competencies and investigated their structure.

Based on the research conducted, it has been determined that the identified competencies consist of such competencies:

• pedagogical competence (PC):

- knowledge, abilities, skills to organize own professional activities,
- knowledge, abilities, skills to organize educational activity of students,

• professional competence (PC):

- a set of special knowledge, which is determined predominantly by basic education, skills and abilities to use them in professional activities,

• design competence (DC):

- knowledge, abilities, skills in designing own professional and pedagogical activities,
- knowledge, abilities, skills in designing educational and cognitive activity of students,

• psychological competence (PC):

- to know the laws of mental processes and states of personality,
- be able to use this knowledge in the educational process,

• motivational competence (MC):

- installation for professional improvement,
- the ability to know own motivation for professional activity,

• reflexive competence (RC):

- be able to comprehend their own professional opportunities,
- be able to comprehend their own personal capabilities,

• adaptive competence (AC):

- knowledge, abilities, skills to adapt to the conditions of professional activity,
- abilities and self-development skills,

[11] Iyevlyev O. Concept of forming professional and pedagogical mobility of the future lecturer in the master's degree. Обрії : наук.-пед. журнал. 2018. №2 (47). С. 35-36 [С. 33 – 36].

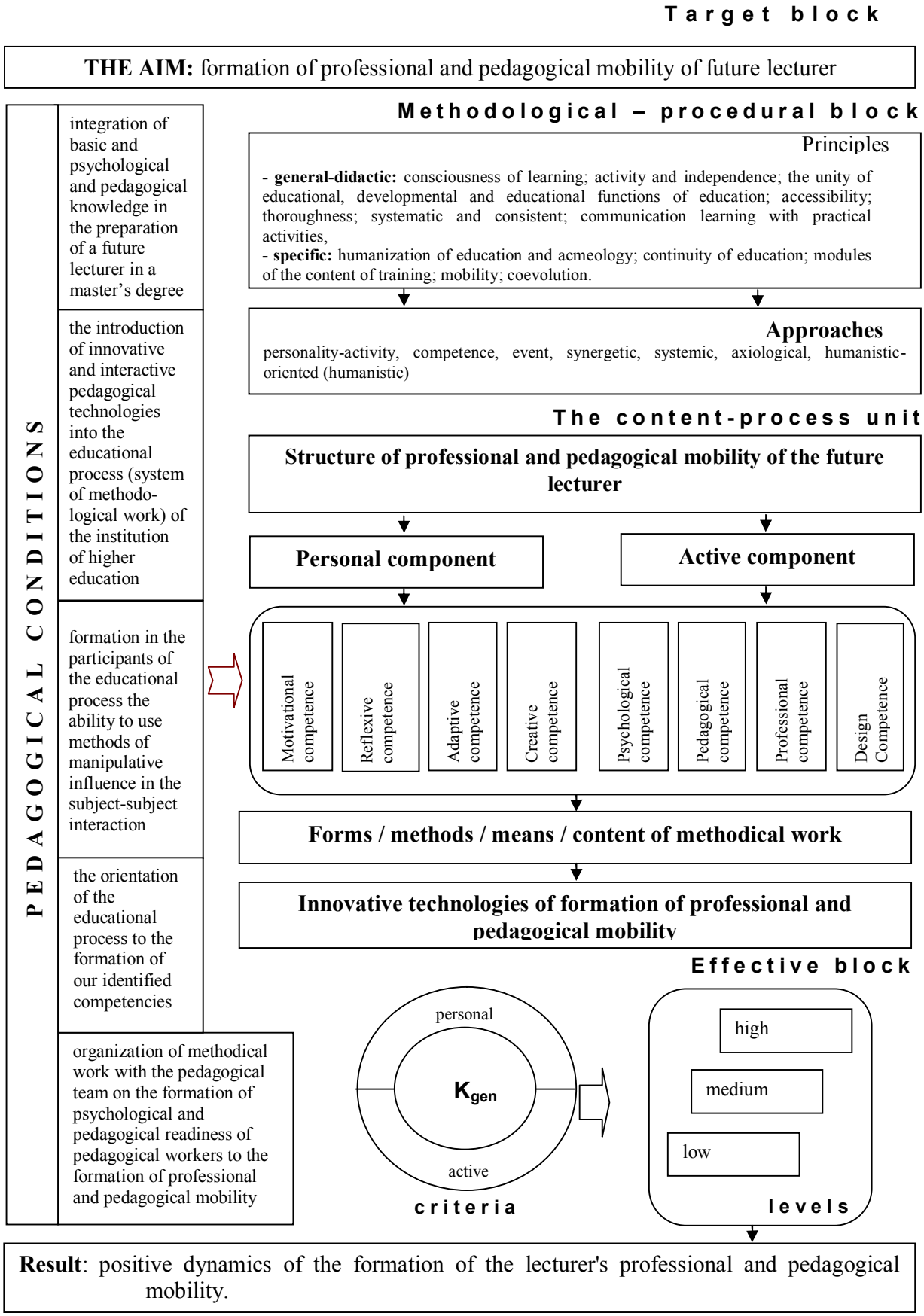

Fig.1. Model of formation of professional and pedagogical mobility of future leturer.

- creative competence (CC):
  - creative attitude to professional activity,
  - be able to master the ways of creativity in it.

b) Formation of professional and pedagogical mobility is associated with the use:

- content of the methodical work: perspective pedagogical experience, suggestions and recommendations for raising the level of professional and pedagogical mobility, organization of mentoring, mutual assistance, etc.;
- forms of methodical work: pedagogical reading, pedagogical exhibitions, methodical and problem seminars, conducting of open classes, methodical weeks, round tables, conferences, etc.
- methods of methodical work: work in creative groups, coach sessions, training, methodical business games, methods of manipulative (pedagogically-manipulative) influence, etc.;
- means of methodical work: multifunctional printed hand-out material; reference notes etc.

This is due to the use of innovative pedagogical technologies that are oriented towards the personality of the future lecturer.

c) Innovative technologies – is a purposeful system of sets of techniques, facilities for organizing learning activities, covering the entire learning process from goal definition to obtaining results. This system is based on internal learning conditions, which is why pedagogical technologies are connected with the ideas and experience of psychology, sociology, system analysis, etc. [12].

Let's dwell on the main innovative pedagogical technologies, as should be used for the formation of the personal component of professional pedagogical mobility.

Thus, using forsite technology for mobility development allows students to acquire skills to predict their own future[13]. Creating a Foresight project «I am the future lecturer» and will help students to successfully adapt to the conditions of professional activity. Participation in the project allows the student to demonstrate their own individuality, to reveal creative abilities, to feel as a lecturer.

The technology of guided self-education is realized through the arrangements for group rallying, the development of the common goals of the educational community of the institution of higher education, individual assistance, openness, transparency, joint activity, exchange of opinions. The content of the study is determined by the program and corrected by the demands of the listeners[14]. According to L. Amirova, the advantage of technology, it is possible to reduce the use of the dependence of the

[12] Гаргін В. В. Використання інтерактивних технологій навчання у проектно-технологічній діяльності. *Вісник Чернігівського національного педагогічного університету. Серія : Педагогічні науки*. Вип. 137, 2016. С. 213 [С. 213-216]. URL: http://nbuv.gov.ua/UJRN/VchdpuP_2016_137_52 (дата звернення: 21.05.2019).

[13] Вороновська Л. П. Формування професійної мобільності майбутніх фахівців комунального господарства: дис.... канд. пед. наук : 13.00.04. Дніпропетровськ, 2016. С. 97 [267 с.]

[14] Амирова Л.А. Реализация технологии управляемого самообучения преподавателей вуза в дидактической системе последипломного образования. *Известия Самарского научного центра Российской академии наук*, т. 12, №3(2), 2010. С. 297 [С. 296 – 298].

result of training on the level of professional skill of a particular listener in the «subject-subject» interaction of participants in the educational process.

«Brainstorm» і «Case-method» («case-study») are most effective among the methods of collective-group education, which is conditioned by their influence on the personal and professional development of the future lecturer as it induces self-efficacy in intensive activities based on the identification of their own imagination, creativity, free expression of their thoughts[15].

For the formation of the active component of professional and pedagogical mobility, it is advisable to use other innovative pedagogical technologies.

Technology of projective activity – is a system of learning that involves flexible organization of the educational process and, in the opinion of Yu. Biktuganov, ensures the professional and personal growth of the lecturer, increasing professional mobility[16]. Technology contributes to the development of autonomy, creativity and intellectual abilities.

At the same time, it is possible to highlight technologies, the use of which enables the formation of two components of professional and pedagogical mobility.

Thus, the use of training technologies implements an active model of learning that stimulates the independence of students, allows them to demonstrate non-standard thinking and creativity, increase adaptability and reflexivity.

At the same time, examples of training situations can be: role and problem situations of professional activity, situations related to the lecturer's specialty, situations related to modeling and designing of pedagogical reality, conflict situations, etc.

An important technology that is expedient to use for the formation of professional and pedagogical mobility is the technology of using pedagogically-manipulative influences in the educational process.

Manipulative influence in the pedagogical process requires adequacy and self-evaluation, harmonization with certain generally accepted norms. The criterion for the morality of pedagogical manipulations is the ethical principles and moral norms, as well as the motives and goals that govern the subject of influence for the continuous improvement of the educational process [17].

The leading characteristic of this influence is the direction of its action on the stereotyped behavior (reaction) of participants in the educational process, which determines its effectiveness in the formation of pedagogical and pedagogical mobility.

When forming professional and pedagogical mobility, it is also advisable to use *professionally-integrated (personally practical-oriented) innovation technology*

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[15] Пріма Р. М. Теоретико-методологічні засади формування професійної мобільності майбутнього фахівця початкової освіти : автореф. дис.... д-ра пед. наук : 13.00.04. Одеса, 2010. С. 31 [48 с.]

[16] Биктуганов Ю. И. Развитие профессиональной мобильности учителя средствами проектной деятельности в системе дополнительного образования : автореф. дис.... к. пед. н. : 13.00.08.Москва, 2013. С. 5 [22 с.]

[17] Калінська О.П. Розвиток педагогічної майстерності викладача економічних дисциплін у вищому навчальному закладі : дис.... канд. пед. наук : 13.00.04. Львів, 2018. С. 154 [345 с.]

proposed by L. Sushentseva, which includes the goal of the formation of mobility (in our case, professional and pedagogical); specific features of the profession (professional qualification of a pedagogical worker); content of the subject; the presence of teaching and technical means of training (including distance education); individual psychological peculiarities of students (pupils), their ability to independently acquire knowledge, abilities, skills, key and professional competences; level of professional-pedagogical and methodical skills of the lecturer [18].

d) the author defined pedagogical conditions that allow forming professional and pedagogical mobility:

- integration of basic and psychological and pedagogical knowledge in the preparation of a future lecturer in a master's degree;
- the introduction of innovative and interactive pedagogical technologies into the educational process (system of methodological work) of the institution of higher education;
- formation in the participants of the educational process the ability to use methods of manipulative influence in the subject-subject interaction;
- the orientation of the educational process to the formation of our identified competencies;
- organization of methodical work with the pedagogical team on the formation of psychological and pedagogical readiness of pedagogical workers to the formation of professional and pedagogical mobility.

4. *The result block* describes the criteria / levels of the formation of professional mobility.

To assess the formation of professional and pedagogical mobility, it is suggested to use levels that correspond to the scale of indistinct linguistic assessments: low, medium, high.

The criterion of the formation of professional and pedagogical mobility (k_{gen}) takes into account the stage of formation of its personal and active components.

The result of the implementation of the model is the positive dynamics of the formation of the professional and pedagogical mobility of the future lecturer.

It should be added that the process of humanizing the content of education and training contributes to the formation of both the personal and the active component of professional and pedagogical mobility. The process of humanization involves the creation of an appropriate educational environment and the use of the above innovative pedagogical technologies. Implementation of ideas, humanization of the content of education and training affects the formation of the personality of the future lecturer (induces to self-realization, creativity, humanity etc.) and is directly related to the style of further professional activity of the lecturer.

[18] Сушенцева Л.Л. Теоретико-методичні засади формування професійної мобільності майбутніх кваліфікованих робітників у професійно-технічних навчальних закладах : дис... д-ра пед. наук: 13.00.04. Київ, 2012. С. 322 [559 с.]

3. The system of work of a higher education institution for the formation of the professional and pedagogical mobility of a future lecturer in a master's degree

According to the results of our analysis, while investigating the problem of the formation of mobility, most scholars emphasize the corresponding changes in the educational process as a didactic system without the details of the structural units of higher education institutions that should be involved. At the same time, the construction of such a system increases the efficiency of the implementation of the results of such studies.

Such a system of work must be open, dynamic, adaptive, and envisage mastering by university professors and students who are studying to become lecturer, the technology of forming this type of mobility.

The construction of a system of work for the formation of professional and pedagogical mobility of a future lecturer in a higher education institution can be carried out at levels: – *the target* (training of professional mobile personnel as a request of society, the task of the education system, the quality of the personality of a specialist), *administrative* (within the framework of a unified strategy for the development of links of pedagogical education, which covers all areas of activity and components of the university's educational system), *organizational* (within the framework of the integration, innovation and information educational environment, which operates taking into account the axiological foundations of the organization of the educational process), *qualitative* (within the framework of a unified university quality management system)[19].

Implementation of unified approaches to the training of future professional and pedagogically mobile lecturers in the conditions of the magistracy should be assigned to the study-methodical commissions of the corresponding specialties of the university (Figure 2), which carry out (at least once a year) monitoring of educational programs in relation to the established purpose of the program and its compliance with the needs of students, employers, other groups of stakeholders and society[20].

At the suggestion of the basic department, these commissions should approve the clarifications in the content of educational disciplines (classroom and independent work) that are related to the theoretical and practical issues of professional and pedagogical mobility, and to introduce the corresponding author's courses (educational-methodical complex (EMC) «Professional mobility of a graduate of an educational institution» – for specialization «Management of an educational

[19] Игошев Б. М. Системноинтегративная организация подготовки профессионально мобильных педагогов : автореф. дис.... д-ра. пед. наук : 13.00.08. Екатеринбург, 2008. С. 35 [44 с.]

[20] Положення про формування, затвердження та оновлення освітніх програм в Національному університеті «Львівська політехніка». Львів: Національний університет "Львівська політехніка». 2017. URL : http://lp.edu.ua/sites/default/files/attach/2018/10336/polozhennya_pro_formuvannya_zatverdzhennya_ta_onovlennya_osvitnih_program_v_nacionalnomu_universyteti_lvivska_politehnika.pdfpdf (дата звернення: 16.04.2019).

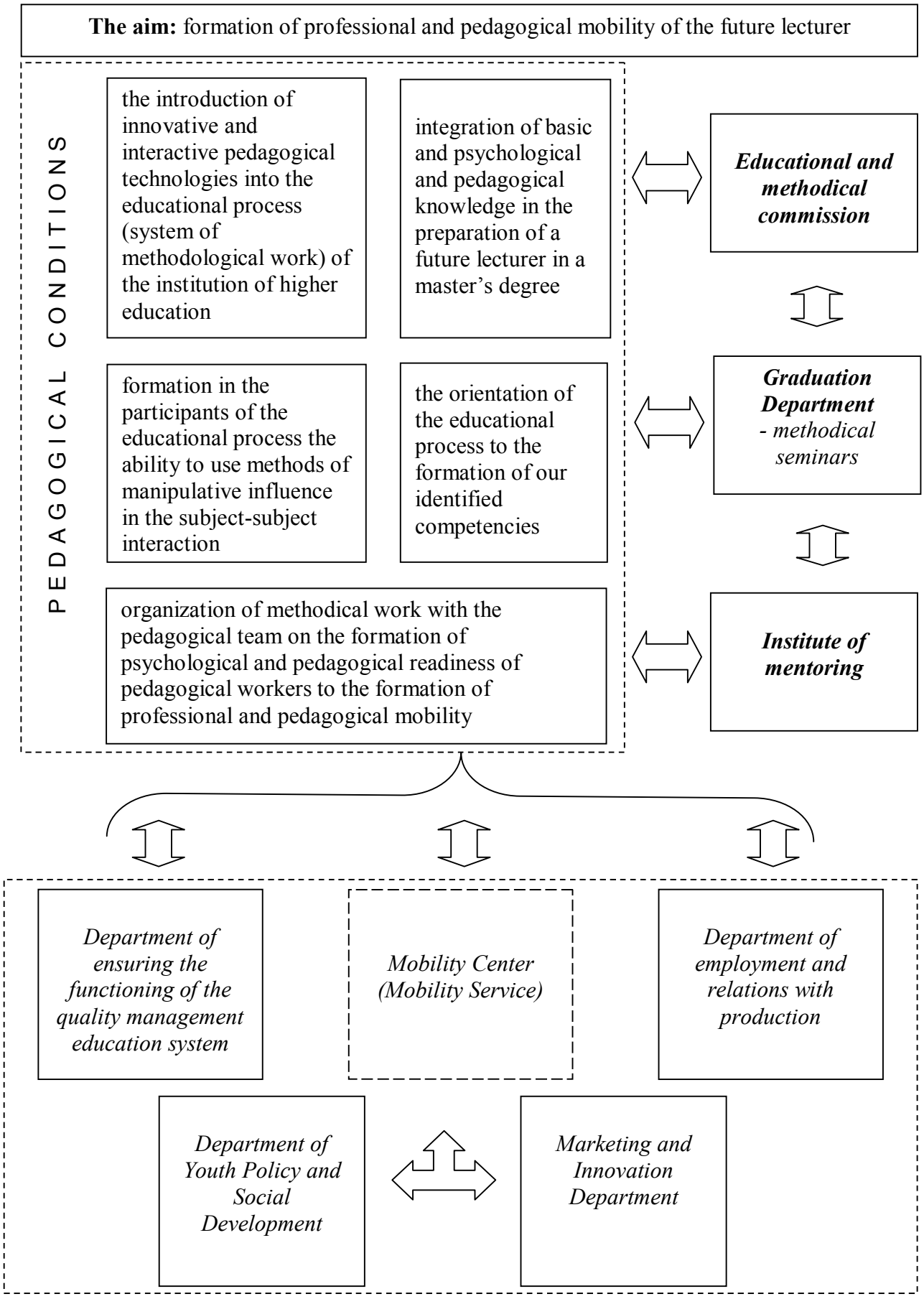

Fig. 2. The system of work of the institution of higher education on the formation of professional and pedagogical mobility of the future lecturer.

institution» specialty «Management»), EMC «Professional and pedagogical mobility of the lecturer» for the specialty «Educational, pedagogical sciences»).

Taking into account the urgency of the problem of training professionally mobile specialists in the programs of the first (Bachelor) level of higher education, an author's course with a content unit (subject) «Professional and pedagogical mobile lecturer» (EMC «Fundamentals of Professional Mobility» – for all the specialties of the University) has been introduced.

Formation of professional and pedagogical mobility, which involves the involvement of leading specialists in the education system in the educational process – the heads of educational institutions, professors and associate professors, etc.

Improvement of the qualifications of lecturers in professional and pedagogical mobility should be carried out on methodological seminars on this problem or by introducing relevant content modules (lectures) into programs of permanent university seminars.

So the Department of Pedagogics and Social Management of the Lviv Polytechnic University conducts training under the professional program of professional development of scientific and pedagogical workers of higher educational institutions of Ukraine «Professional development of a lecturer of a higher education institution» – Seminar of pedagogical knowledge, within the framework of which the professional development of professional pedagogical mobility is carried out.

To work on the formation of professional and pedagogical mobility, a mentor (curator) should be involved.[21], which involves the inclusion of appropriate measures in the plan of educational work with the academic group («Institute of mentors»), and the work of identifying and promoting the creative growth of students.

The development of proposals for the improvement of the organizational and functional structure of management in the educational process at the university and the determination of the functional responsibilities of the subjects of management is assigned to the Department of Youth Policy and Social Development of the University[22].

As the level of professional and pedagogical mobility determines the quality of future lecturer' training in a master's degree, it can be used as one of the criteria for quality in the system of internal quality assurance (SIQA) of the educational activity and the quality of higher education of the university (*Department for ensuring the functioning of the university's quality education management system*).

SIQA provides for monitoring and evaluation of the quality of the educational process at all stages of its implementation, the development of mobility of

[21] Положення про наставника академічної групи». Львів: Національний університет «Львівська політехніка». 2016. URL : http://lp.edu.ua/polozhennya-pro-nastavnyka-akademichnoyi-grupy (дата звернення: 15.04.2019).

[22] Тимчасове положення про відділ молодіжної політики та соціального розвитку Національного університету «Львівська політехніка». Львів: Національний університет «Львівська політехніка». 2016. URL : http://lp.edu.ua/tymchasove-polozhennya (дата звернення: 14.04.2019).

participants in the educational process, innovation in educational activities, definition of principles and procedures for ensuring the quality of higher education[23].

Another link that can be involved in the formation of the professional and pedagogical mobility of a future lecturer in a master's degree is the department of employment and production relations, which deals with the organization of the practice and internship of students in the production, organization and holding of presentations of firms and companies, employment measures[24].

Thus, the formation of professional and pedagogical mobility involves organizing meetings with leaders and leading specialists in educational institutions.

The system of work of a higher education institution for the formation of professional and pedagogical mobility for the solution of individual tasks may involve a marketing and innovation department that creates ideas for the development and popularization of the university through a variety of activities for all categories of the audience – domestic and foreign, searches for potential investors for existing developments and for potential[25].

In educational institutions, mobility centers (mobility services) can be created, which, unlike the model of methodical service, are not based on the subject matter, but on a functional basis. The Mobility Center performs coordination, management, information, analytical and advisory functions[26]. Formation of professional and pedagogical mobility will be one of the functions of such a service.

Conclusion

The leading direction of the education system should be the training of a professional mobile lecturer able to quickly become involved in educational activities, qualitatively conduct training sessions, meet the requirements of modern legislation and regulations to a pedagogical (scientific and pedagogical) employee.

The success of the future lecturer's professional activity is determined by the level of professional and pedagogical mobility through the formation of the respective competencies, the components of which are competencies. The mastery of these competences will take place during the study of disciplines of the curriculum of specialties of the second (master's) level of higher education and the introduction of educational programs of specific specialties of author's disciplines (educational and methodological complexes) (for example, «Professional mobility of a graduate of an educational institution», «Professional and pedagogical mobility of the lecturer»).

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[23] Положення про систему внутрішнього забезпечення якості освітньої діяльності та якості вищої освіти Національного університету «Львівська політехніка». Львів: Національний університет «Львівська політехніка». 2018. URL: http://lp.edu.ua/polozhennya-pro-svzya (дата звернення: 15.05.2019).

[24] Положення про відділ працевлаштування та зв'язків з виробництвом Національного університету «Львівська політехніка». Львів: Національний університет «Львівська політехніка». 2018. URL : http://lp.edu.ua/napryamy-diyalnosti-viddilu (дата звернення: 16.04.2019).

[25] Про нас / Відділ маркетингу та інноватики. Львів: Національний університет «Львівська політехніка». 2019. URL : http://lp.edu.ua/pro-nas (дата звернення: 15.05.2019).

[26] Сушенцева Л.Л. Теоретико-методичні засади формування професійної мобільності майбутніх кваліфікованих робітників у професійно-технічних навчальних закладах: дис... д-ра пед. наук: 13.00.04. Київ, 2012. С. 214 [559 с.]

The formation of professional and pedagogical mobility of future lecturer is facilitated by the process of humanizing the content of education and training, which involves the creation of an appropriate educational environment and the use of innovative pedagogical technologies.

The system of work of the institution of higher education on the formation of professional and pedagogical mobility of the future lecturer in the conditions of the magistracy covers the basic departments, educational-methodical commissions of specialties, «institute» of mentors, certain departments of the university and provides for methodological seminars and educational measures.

Abstract

The success of the future lecturer's professional activity is determined by the level of professional and pedagogical mobility through the formation of the respective competencies. The proposed authors model allows to ensure a positive dynamics of the formation of the professional and pedagogical mobility of the future lecturer in the conditions of the magistracy. It is determined that the formation of the professional and pedagogical mobility of future lecturers is facilitated by the process of humanization of the content of education and training, which involves the creation of an appropriate educational environment and the use of innovative pedagogical technologies

The developed system of work of the higher education institution for the formation of the professional and pedagogical mobility of the future lecturer in the conditions of the magistracy covers the basic departments, educational-methodical commissions of specialties, «institute» of mentors, certain departments of the university and provides for methodological seminars and educational events.

Keywords: professional and pedagogical mobility, master's degree, model of formation of professional and pedagogical mobility, system of work of institution of higher education on the formation of professional and pedagogical mobility, lecturer, pedagogical conditions, competence, competencies.

Streszczenie

O sukcesie działalności zawodowej przyszłego nauczyciela decyduje poziom mobilności zawodowo – pedagogicznej poprzez kształtowanie odpowiednich kompetencji. Zaproponowany model autorski pozwala zapewnić pozytywną dynamikę kształtowania mobilności zawodowo – pedagogicznej przyszłego nauczyciela w warunkach magisterki. Ustalono, że proces humanizacji treści kształcenia i szkolenia sprzyja kształtowaniu mobilności zawodowo – pedagogicznej przyszłych nauczycieli, co obejmuje stworzenie odpowiedniego środowiska edukacyjnego i wykorzystanie innowacyjnych technologii pedagogicznych.

Opracowany system działalności instytucji szkolnictwa wyższego w zakresie kształtowania mobilności zawodowejo – pedagogicznej przyszłego nauczyciela w warunkach magisterki obejmuje podstawowe katedry, komisje edukacyjno-metodyczne specjalności, „instytut" mentorów, niektóre wydziały uniwersytetu oraz przewiduję seminaria metodyczne i działania wychowawcze.

Słowa kluczowe: mobilność zawodowo – pedagogiczna, magisterka, model kształtowania mobilności zawodowo -pedagogicznej, system działalności instytucji szkolnictwa wyższego w zakresie kształtowania mobilności zawodowo – pedagogicznej, nauczyciel, warunki pedagogiczne, kompetencje.

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Reforms of secondary education in Ukraine and Poland: contrastive analysis

Introduction.

Reforming of education in each state is a continuous and long lasting process. The reforms in education are spurred by contradictions that arise between the separate components of the educational process and lead to various problems. If contradictions and their consequences are not ignored or ignored, then you can bring education to complete destruction. However, the identified contradictions need to be properly addressed by using scientifically based methodology.

In the former soviet state, the unanimous ideology was Marxism-Leninism, which proposed to solve any contradiction from the angle of view: what is the primary, and what is the secondary? The uniqueness of this methodology has led the country to a dead end.

It is well known, that the Soviet educational system was built on the priority of social needs over individual-personal, material over spiritual, a teacher over a pupil, learning about individual development. Hence, as a result, an educational system with the same type of educational institutions, the only curriculum and programs, the only terms of study and compulsory termination thereof, was formed. And this can only be achieved through authoritarian means, imperative studies. And the results are the following: formalism, eye-emulation, hypocrisy, falsehood, double morality.

Consequently, the absolutisation and recognition of the priority of one of the parties to one or another contradiction in the educational process did not allow to solve the most important problems in education.

V.Lutay proposes to look for a way out in some compromise by making the synthesis of the opposite sides of the contradiction: "Therefore, in recent times the third direction of the philosophy of education becomes more and more widespread. His main idea is to overcome the priority role of the source principles of the two previous directions and to carry out such a synthesis of their positive ideas, which

would enable to better solve the main problems of modern education, and thus other important problems of mankind "[4, p.75].

However, in our opinion, in resolving the contradictions in education, the non-synthesis of their opposite parties will lead to proper achievements in education. We should take into account the achievements of educational results and socio-political conditions, the internal force of constitutive contradictions, their integration with the provision of a leading function one of them by the spiral method. For example, during the struggle for Ukraine's independence, the first steps in its formation under the prevailing conditions of Marxism-Leninism, the leading role of deideologization and depoliticization of education was justified. But at present such a statement of the question would be anti-state, since the ideology of state formation has become the leading in educating the future of the Ukrainian nation.

After the domination of authoritarian “childless” pedagogy, the provision of a leading role in the individual-personal needs, interests, values, which entails a change in target settings (the development of self-goals), the democratization of school life, the humanization and humanization of the educational process itself is a positive phenomenon. Until we consider these processes as a panacea for the end of the educational crisis in general. After all, all practical pedagogical workers are well aware that without the elements of coercion, there will be no democratization in education.

Another question that this compulsion will be: whether purely physical, which is a negative component in teaching, or exclusively pedagogical (the whole structure of the educational system, its technology prompts students to intensive, but intensive and systematic educational work).

To solve contradictions, we will propose a methodology based on the following principles: the principle of identity of opposites in the infinite (M. Kuzansky), the principle of ascent from abstract to concrete (Hegel), the principle of dialogue of cultures (Bibler), the principle of differentiation and integration.

In our opinion, the principle of the identity of opposites in the infinite gives the opportunity, on the one hand, to construct the philosophy of the educational system on the principles of complex interconnection and interpenetration (integration) of polar constituent contradictions depending on the socio-political situation. On the other hand, taking into account the possible identity of opposites

(for example, a polygon inscribed in a circle, where the number of its sides is infinitely doubled) in the infinite, to see the remote perspective of the development of opposite contradictions in the close interactions. On the basis of this principle, the integration of the opposite sides of the contradiction is realized. The principle of convergence from the abstract to the concrete (Hegel), which complements the principle of identity of opposites in the infinite, allows a definite general contradiction to be specified by a system of sub-contradictions. It helps to detail the content of each of them, to design the constituent contradictions on the specific components of the educational process.

The dialogue implies an understanding, a positional agreement in resolving any contradiction, that is based on the target setting, where each component of the contradiction contains positive elements. Not finding reasons for exacerbating

contradictions, not attempting to affirm one of the constituent contradictions by volitional methods, but a common search for truth, the desire to bring the opposite positions closer, is the basis of the principle of the dialogue of cultures. Dialogue interaction is not only a necessary condition for resolving contradictions, but also a prerequisite for the democratization and humanization of educational processes.

The principle of dialogue interaction allows you to transform the student from the object into the subject of learning, to create an atmosphere of partnership and cooperation in the classroom, prompting teachers to systematically improve their professional level.

Consequently, the principle of dialogue interaction involves a positive perception and a humane attitude to the opposite opinion, view, position, the search for a common ground of the opposing sides, the unification of efforts to resolve contradictions.

The given system of methodological principles is united by the dialectical method, which actually directs to such a method of studying crisis phenomena. This process is based on the identification of their contradictions, the determination of disproportions between their components, and on this basis, the establishment of an algorithm to exit the crisis, overcoming the negative directions in education.

Proper identification of the main contradictions and their correct solution is the main driving force in improving all social processes, including educational ones.

However, in order to establish the patterns of development, it is necessary to trace the dynamics of the multiplication of contradictions by identifying the opposite faces of both components of the main contradiction and on this basis determine new subcontradictions. The ability to disamble some integrity into separate, qualitatively new, opposite parts characterize the depth of thought activity, and inexhaustible opportunities in the improvement of social institutions through the dialectical structuring of their content.

Hence, the principle of differentiation is the dismemberment of the components of this contradiction to the new opposite parts, together with the principles of the identity of opposites in the infinite, dialogue interaction and ascension from abstract to concrete and step by step will form the basis of a new methodology that will fully allow dialectically to explore and direct the development of social components for development, not for destruction.

Thus, the principle of dialogue interaction aims at resolving contradictions due to the special interpenetration (integration) of their components with the alternate preservation of the leading role of one of them, which will not only resolve the contradiction, but also creates a new type of interaction of contradictions that will ensure the further development of the social institution on higher levels. The preserved contradiction will be differentiated into parts (subcontradictions) and will continue to remain a source of inexhaustible energy, a motive for further progress (identity in the infinite).

1. The main contradiction in education and its impact on the reform of education in Ukraine

We have to determine the main contradiction in education, which is the main driving force of its development, based on the objective existence of society,

individual individuals and nature, which binds them. This will be a contradiction between the needs of society ("it is necessary") and the needs of individuals (" I want"), taking into account their physical and psychological capabilities ("I can").

It is obvious that such a triad method of determining the main contradiction in education ("it is necessary", " I want", "I can") will allow us:

a) objectively build a hierarchical system of derivative contradictions;

b) to solve them more effectively and adequately in order to reform educational processes.

It should be noted that each of the three main components of the main contradiction mentioned has its own internal strength and resistance, which must be taken into account when looking for ways to overcome the crisis. The mechanical provision of advantages to one side of the conflict not only does not solve educational problems, but also leads the formation, and hence, the development of the state to such crisis states, the outcome of which will require a radical break in socio-political foundation.

On the basis of our main contradiction in education we will form a hierarchical system of derivative contradictions in the educational process:

- requirements for teachers and psychological and physical abilities of students;
- learning and development processes;
- the prevailing group forms of learning and the individual character of the acquisition of knowledge;
- the psychological state of children in the critical stages of critical change in learning technologies;
- educational and developing components of content units;
- methods of information retrieval and explanatory and illustrative education;
- digested by theoretical knowledge and practical skills;
- the ratio of subjects of natural-mathematical and humanitarian cycles;
- activity nature of children and relatively static learning conditions;
- differentiation and integration of the contents of educational subjects;
- achieved level of knowledge and new knowledge;
- range of assessments and spectrum of mental abilities of students;

Degree of development of general educational abilities and requirements of assimilation of all new knowledge:

- distribution of efforts on the actual mastering of knowledge (concepts, laws, facts, etc.) and the use of educational material for the formation of general education skills;
- knowledge that performs general education, developmental functions, and knowledge projected for the future profession;
- differentiated character of educational disciplines and integrated character of thought activity, world outlook;
- professional intentions of pupils and their intellectual abilities;
- formed abstract-symbolic forms of thinking and practical-practical requirements for life;
- the level of knowledge for secondary education and the requirements for higher educational institutions "[7, p.33-35].

Among the above mentioned contradictions are tactical, that is, those that are solved by each teacher, and strategic, which are solved at the state level. As you know, the development of science leads to the expansion of the range and depth of knowledge, therefore logically there is a need to renew the content of education, breaking down the basic content of new knowledge. Evolution of the cognitive sphere significantly influences and in some way changes the children's intellectual background. However, cognitive changes are significantly ahead of the growth of mental abilities of children.

Proclaimed in the Law of Ukraine "On Education", including the new, compulsory secondary education was formally implemented. The main reason is ignoring the individual characteristics of the pupils by the Ministry of Education and Science of Ukraine and Verkhovna Rada. According to the law of normal distribution (the Gauss' curve) 2-3% of gifted children are born, 16-18% are capable, 12-13% with different anomalies, but not 2-3% of pupils according to the Gauss' curve, because alcohol, ecological disasters increase the quantity of children that are born with different deviations from the norm. In addition, 18-20% of children with low mental abilities are born, and the rest are with average mental abilities. If in the course of educational reforms, the principle of conformity of nature, which follows from the law of normal distribution of probabilities of childbearing (the Gauss' curve), that is, to ignore the individual characteristics of pupils, that follows from the law of normal distribution of probabilities, then any reforms in education will not produce positive results.

Although many fundamental changes in education have been made in Ukraine: the press of a monotheistic doctrine has been put away, the outlook of youth has been liberated from the postulates of Marxism-Leninism, freedom of conscience has been restored, educational institutions have returned to the truthful history, external independent evaluation of secondary school graduates has been introduced, the institution of schools has been democratized. However, the general education school has maintained its structure virtually unchanged, except to take into account changes in the signatures of certain secondary schools (and, as a rule, in cities) at the gymnasiums or lyceums. The government continues to examine educational institutions for survival, without financing for their development.

Currently, the Ministry of Education and Science of Ukraine is conducting another reform of the educational system, which should solve such problems:

- to ensure the maximum comprehensive development of children (intellectual, physical, social, aesthetic, etc.) in preschool and elementary school;
- to equalize the educational achievements of rural schoolchildren in comparison with their city peers, having organized a profile education in lyceums;
- to improve the current 12-point evaluation system, because it does not take into account pedagogical patterns and increases the bias of evaluation;
- to introduce activity and competence approaches in secondary education institutions;
- to improve the process of preparation of pedagogical workers and increase their qualification;

- to reduce the number of educational subjects in the secondary classes, using the didactic integration of neighboring subjects;
- to reform the educational system on the principle of conformity of nature, so that each student learns and develops at the pace and mode specified by his nature, and in high school pupils studied in 3-4 parallel profile classes;
- organize an external independent evaluation for graduates who complete basic secondary education;
- to reduce the percentage of graduates of secondary education institutions who enter higher education institutions from 82% to 25-30%, thereby increasing the number of students to vocational education institutions;
- to bring the number of higher educational institutions to international standards (for 1 million people there must be one university).

Since all the components of pedagogical contradictions are related to the subjects of the study, therefore, during their solution it is impossible not to take into account the fact that each child is a unique personality, with its genotype, genetic field, individual domestic and natural surroundings, which create a unique aura for the development of mental and physical forces.

Without taking into account the real individual abilities of children, without reviving pedological research of our pedagogical science, and with it and practice, will never get rid of the bulk of authoritarianism, childlessness and formalism.

Consequently, the principle of natural conformity does not imply only placing in the epicenter of all pedagogical studies the uniqueness of the child, but also the teacher, and make them the basis for the integration of the opposite contradictions, given that social needs are the result of the interpenetration of individual needs and that the creators of society, education have yet and their personal interests and needs.

The main means of realizing the previous principle is the system differentiation of education, which serves as the main component in the organization of the educational process at all levels – from pre-school to high school. But at all degrees, differentiation has its own peculiarities, as it touches both the content and procedural, and structural-system components of education.

The principle of integration of constitutive contradictions is its interpenetration. We note that the principle of system differentiation reveals the path to a deeper penetration into the essence of the contradiction by decomposing it into derivatives, the creation of an adequate differentiated educational system that would correspond to natural development and the formation of human beings. The established system of methodological principles enables at each stage of development of education to trace the system of derivatives to the main contradiction and adequately respond to their overcoming by reforming the educational system in such a way that is not forced by methods, but by legal and pedagogical means to make the necessary correction and to encourage teachers and to act in the right thing for society, and hence for them, in the direction.

Consequently, the dialectical approach to management through the investigation of the contradictions of the object of management and the use of methodological principles for solving certain contradictions, allows you to quickly improve the

existing educational system, and in conditions of moral and legal constraints – to create a new moral and legal field and to make more radical changes.

2. Educational reforms in Poland

For comparison, let us have a look at the process of reforming education in Poland, which has been systematically conducted since 1990.

Both in Poland and Ukraine, the results of studying in urban schools differed significantly from rural schools, and this was the reason for the immediate changes. These changes were associated with the decentralization of governance, that is, the formation of "gmin" (communities). That work began in 1997.

Communities were formed, self-government was actively developing, schools underwent under their control. Educational curriculums have changed significantly, the influence of the parent community on the work of the school (incidentally, everything that is happening at school, is taken with the consent of parents).

Since 1998, the compulsory exam during the final examinations on the matriculation certificate becomes mathematics. However, from 2002 and until 2005 all changes are reviewed (in particular, it again affects the final examinations, the exam on mathematics is canceled). By the way, now the Ministry of Education and Science of Ukraine plans to introduce in 2021 mathematics as a compulsory subject for state final certification in the form of external independent evaluation at different levels of tasks. Obviously, the level of mathematical preparation of graduates of schools is expected to be substantially raised by this. However, the principle of natural correspondence (Gauss' normal distribution curve) and my half-century experience in teaching mathematics confirm that almost 30% of pupils can not even master mathematics in V-VI classes, which is based on actions with decimal and conventional fractions. Since all children in Ukraine have to get the secondary education, then, of course, during the external independent evaluation they mechanically indicate the answers in the closed-ended test tasks. Thus, we will further reduce the motivation of students to systematically study mathematics and deepen formalism in higher school. At the same time, it is essential to improve the quality of mathematical education. This is an axiom. But all didactic efforts need to be directed at those pupils who, according to their intellectual abilities, are able to master complex mathematical concepts. And this is the optimal intellectual development of children in the pre-school period and in primary schools by the method of V.O. Sukhomlynskyi that is based on the differentiation and profiling of training, the use of effective teaching technologies, and high mathematical and methodological training of teachers, and the corresponding salary.

Since 2005 expenditures on education are decreasing, at the same time paying attention to assessing the quality of the teacher's work as one of the main factors influencing the quality of the school work.

Since 2007 Polish education has undergone another change. In particular, the introduction of first-year pupils's training at school from the age of 6 is introduced (now parents can still decide from which age their child will go to school – from 6 or 7 years old). By the way, in Ukraine, this problem was solved in 1986, when it was a part of the Soviet Union. However, for the purpose of transferring children to

education from the age of six, four years (from 1982 to 1986) were conducted experimental research.

In Poland, they also encountered certain problems with the transition of children to six-year-old as a first year pupil. In particular, teachers were not ready, the absence of classrooms and didactic support, as well as resistance from parents was significant. There were even mass protests under the slogan "Save the Toddlers", because parents believed that in this way they stole childhood from their children provided them school age that stared from 6.

In 2012, new changes in education were made. Teachers were given the possibility to write their own copyright programs. However, they were not ready for this. History teachers went on strikes ("hungry strikes", because the number of hours have been significantly reduced. They were supported by teachers of natural sciences and mathematics. The resistance was made because there was no preparatory work, no experimental studies were organized. Requirements for teachers grew, and wages remained the same.

From 2015 to 2018, taking into account the wishes of teachers, a new program was created. Lyceums became the most popular in Poland as a kind of secondary schools (for example, in Cracow there are more than 65 high schools, 46 of them are state-owned).

From October 1, 2018, a new law "Law 2.0" came into action. New Constitution on Science and Higher Education in Poland ", the first attempt to reform higher education for 12 years. This law allows higher education institutions to become more independent, to obtain a certain autonomy, to expand the capacity of rectors of universities, including financial decision-making.

After reforming the Polish system of education looks like this:

- From 3 to 6 years old, pre-school educational institutions (przedszkoła) are available to all. They are both public and private (from a few months to three years the child is brought up at home, but there are private nurseries, although there are very few). The state guarantees training in the kindergarten, but there is no such quarantee in the public nurseries. Education is compulsory before entering the 1st form – this is either a year in the garden, or a zero grade (zerówka) at the school;
- From 6 (or 7 years old) the child comes to school and has 8 years of study in the elementary school (szkoła podstawowa).

By 2017, the children had been studying for 6 years at elementary school and continued their studies at the gymnasium (3 years). However, since 2020, the gymnasium will be eliminated, that is, the elementary school becomes 8-year old, and the senior secondary (lyceum) is 4-year-old.

Incidentally, in Ukraine, this unsuccessful change of the name of the second educational level from the main school to the gymnasium was copied. What will change if the main school, in which there are 50-80 pupils study, is called a gymnasium, which has a long history in Ukraine. During the period of independence in Ukraine, powerful gymnasiums (500-2000 students), with high-quality pedagogical staff, system of selection of students were formed. Thus, the Ministry of Education and Science of Ukraine complicated the structural reformation of

education, exacerbating the contradictions between the main schools that would become subsidiaries of reference schools and those who will receive the status of the gymnasium. Therefore, it was well done in Poland, when the mistake was corrected in time.

After graduation from primary school in Poland, you can choose several ways to get the secondary education – they are lyceums or technical schools. The most popular educational institutions are general education specialized lyceums (here the studies are 4 years), but many students continue their studies in technical schools (5 years of study), or in vocational schools (3 years) and two more years in special secondary schools [5].

As for the assessment of students' academic achievements, the 4-point system of grades: 5, 4, 3, 2. Today, the evaluation system is six-point: "6" – excellent, "5" – very good, "4" – well, "3" – satisfactory, "2" – admissible "1" – unsatisfactory. The six-point assessment system for junior pupils is complemented by descriptive characteristics of success [9].

Unlike the Ukrainian evaluation system, in Poland, every type of activity in the classroom has its "weight": control work – 3 points, oral activity – 2 points, presentation of homework – 1 point.

For example, for a supervised work, the pupil received 4 points, the weight of the grade was 3 (4x3), he received 5 (5x2) for the oral answer, and 6 points for the homework (6x1 = 6).

Average rating from the subject: $(4 \cdot 3 + 5 \cdot 2 + 6 \cdot 1) / (3 + 2 + 1) \approx 4{,}6$.

Then the scale is determined by the score, in the example given – "5".

Mean value	mark
0-1,5	1
1,5-2,5	2
2,51-3,5	3
3,51-4,5	4
4,51-5,5	5
more 5,51	6

For each subject, a pupil has to receive a certain number of points for the semester (the number of weekly hours is multiplied by 2 and add one). For example, if in physics two lessons per week, then for a semester the student should get a minimum of $2 \cdot 2 + 1 = 5$ points.

If a student do not attend the lessons and do not receive the required number of points, he receives an assessment of "unqualified" and, with the permission of the members of teachers, is obliged to finalize the material and write control test from all material.

The internal evaluation system also includes an assessment of behavior. In the first three classes the assessment is descriptive. And from the fourth grade, an assessment for behavior is put forward by a class teacher on the following scale: excellent, good, correct, unsatisfactory. External assessment of pupils is conducted by the Central and District Examination Commissions. Before the last reform in the first stage of external evaluation, the district examination commission checks the competences of the graduates of the 6-year primary school.

For the graduates of the 3-year high school (gymnasium), which is based on the 6-year primary school, the district examination commission conducts mandatory exams that check the skills and knowledge of the humanities and natural sciences and mathematics disciplines. Preparations for examinations start two years before they begin.

When evaluating, the teacher should be guided by the following standards: – usefulness (evaluation will not matter if adequate materials are not used); – diligence (evaluation must be carried out using means that guarantee the probability of the results); – realism (evaluation is made from the point of view of expediency, economic and organizational motives); – ethics (to evaluate only correctly) [3]. An external assessment of a pupil achievements is a complex form of student achievement control. But this phenomena is necessary in the process of reforming the educational system.

Thus, a model of external evaluation has been introduced in Poland with a view to improving the quality control of education, improving the quality of curricula, and identifying the educational advantages and disadvantages of pupils. Graduation exams consist of two parts: internal in the form of oral examination and external – written. From the final examinations, winners of subject competitions are released, winners and holders of language certificates issued by foreign universities or institutes specializing in the preparation of foreigners. Graduates of Polish lyceums make a Polish and math exam on matriculation certificate. Within the framework of the new “matura” (final + entrance examinations), at least four exams must be completed: three compulsory – Polish, a foreign language, mathematics (at 142 different levels of complexity) and one voluntary exam – chemistry, history, physics, biology, geography and a foreign language.

The extra-scholastic assessment will be given by the examination committee together with the district examining commissions. After all, they are developing criteria, requirements and tasks according to which they conduct exams, assess the level of knowledge and achievements of pupils. An examiner may become a teacher who has the appropriate qualification, not less than four years of work experience and will pass the relevant exam [6].

For teachers, the minimum wage is guaranteed, guaranteed by the "Teacher's Card" (Karta Nauczyciela). According to it, the lowest salary for the teacher with the lowest category – 2.717 złotych, it is about 16.302 hryvnia. Depending on the teacher's experience, this salary may increase to 30 thousand of hryvnias.

And these are the only the funds provided by the state as a guaranteed salary for teachers.

In addition to it, there are additional payments, which carry out the “gminy”. Depending on how rich and generous the “gmina” is, the amount of bonuses to teachers in the form of bonuses may vary. According to the law, 1% of the amount of teacher's salary in the school is spent on improving the teacher's qualifications. At the same time, teachers in Poland, like in Ukraine, have the right to choose where to undergo an advanced training.

In Ukraine, the salary of a teacher, depends on the pedagogical experience, qualification categories and pedagogical titles, can vary from 4995 to 7760, that is very low. The "Teacher's Map" in Poland also suggests that a teacher should have the amount of work that are 18 hours a week.

However, in some cases, this amount of work is bigger, provided that the teachers agree to these (24-26 hours). In Ukraine, the same educational amount of work, however, the reduction of almost half the number of pupils and the unlimited term of the teacher's work led to the fact that most teachers do not have a full rate of study amount of work. Polish law states that the state guarantees free education, but local self-government officies are responsible for it. Therefore, the budget provides for funds.

The money for education in Poland comes to “gminy” consisting of several sources: educational subvence, targeted subvence to local self-government administrations, own income of “gminy”, as well as through European Union funds. The largest part of this amount is an educational subvence. Its total amount is determined annually in the budget, agrees by the Minister of Education and the Minister of Finance. In other words, there is an amount that the minister must correctly divide, taking into account the number of pupils in Polish schools. To do this, he uses the so-called "Standard A" – the size of "the cost of teaching one student in a big city." This standard is growing annually, now it is about 5 thousand zlotych per year, about 30 thousand hryvnia (in Ukraine about 10 thousand gryvnias).

However, the general distribution of the subvention is affected by about 40 indicators – a village school or a city, whether there are representatives of national minorities or not, whether there are children with disabilities or not. Accordingly, the money for the training of one pupil in them varies.

Each “gmina” receives this amount in terms of each pupil – so schools compete for each pupil. Similarly, the state transfers money to non-public schools, that is, private schools. Targeted grants are provided for material assistance to schools, the purchase of textbooks, and certain programs that are identified as priorities. For example, this year it concerns food in the dining room. The target subsidy is also money distributed to kindergartens. One more source of money is the personal income of the “Gminy”, which they have from local taxes. In addition, there is still money from European Union regional funds

They are also spent on ensuring equal access to a good quality education for all schoolchildren. Therefore, in the poorer “gmina”, more money is sent.

European Union funds are sending funds not directly to the fugitive budget, but to certain projects. They are selected on a competitive basis by the provincial leadership. In this case, often these projects are conducted by various public associations and non-profit organizations.

Since the sum of the educational subvention for each variable is calculated on the basis of one pupil, this makes them optimize their expenses – united schools, classes. If the “gmina” does not do this, then they will simply have additional costs.

The counties correspond for education in lyceums, vocational schools and technical schools.

Students take exams after elementary school and gymnasium (until 2021). However, these indicators are not a criterion for admission to the following levels of school. It is rather a measure for schools to know if they are good at teaching children.

The results of the school assessment are published in open access, and therefore parents can monitor the level of education at their institution.

An examination after the completion of secondary education is as our external independent evaluation – is called “matura”. It allows the graduate to enter a higher education institution.

Primary school and gymnasium are fixed in certain areas. As a result, they are required to take a student from this area. This is done deliberately to avoid the selection of children in certain schools. In Ukraine, certain areas for recruiting students to the first class are also assigned to schools.

At the same time, lyceums in Ukraine and Poland seek to select students with a high level of knowledge, and not by territorial affiliation. In rural areas, there are no entrance examinations at each stage of the primary school -gymnasium- lyceum. The director of the school in Poland, as well as in Ukraine, is appointed by the governing body after the competition. The competition commission consists of representatives of the management of education, the governing body, the parents' council, the school pedagogical meeting and the trade union [10]. An eight-year elementary school is compulsory for all children, and in Ukraine it is secondary education.

3. The Concept "New Ukrainian School" is the basis for reforming education at the present time

In Ukraine, the reform of education is carried out according to the concept "New Ukrainian School". The concept states that "the most demanded in the labor market will be the ability to study throughout life, think critically, set goals and achieve them, work in a team, communicate in a multicultural space" [2].

Another reason for the change, as stated in the concept, is that "a Ukrainian pupil gets a huge amount of knowledge at school" [2], and pupils often can not apply them to solve life problems. In the modern school, the theoretical component dominates the practical. And this is not the fault of the school. On the one hand, such standards of secondary education are set by the Ministry of Education and Science of Ukraine, and on the other – the educational process is not sufficiently differentiated, even in the upper classes. In addition, in the schools there is a lack of professional orientation. As a rule, the decisions are made by graduates with parents. Their professional choice often depends on the number of points scored during the external independent evaluation.

The contradiction between the theoretical and practical components of education can not be solved using the Marxist-Leninist methodology (which is primary, and that the secondary, the more priority, and the less priority, and regardless of the circumstances). The domination of the theoretical or practical components of education depends on the age of the pupils, that is, the class where the pupils are studying, both on the content of the subject, on the profile of learning, and on future professional choices.

Application of knowledge is an important practical component of education that can be differentiated into two parts: abstract and vital. So, the Ukrainian curriculum and textbooks have many drawbacks with the abstract application of knowledge. For example, stereometric textbooks require pupils to solve abstract problems in finding the surface area and the volume of the rectangular parallelepiped, but in most cases pupils will not be able to calculate how much paint is needed to paint the walls of the room. Moreover, with each subsequent generation of textbooks, the number of vital tasks is reduced.

Not many vital tasks, for example, in mathematics, are proposed for external independent evaluation. So, in order to direct the practical component of the educational subject to the solution of important life problems, it is necessary to start from above:

- change the essence of external independent evaluation (from abstract tasks to vital);
- change the concept of training curricula and textbooks.

Is the current "way of studying in a modern Ukrainian school" [2] motivates children to study? We must note that the modern school has in its arsenal quite a large number of techniques, methods, forms and means of learning, new educational technologies. It is only necessary to structurally rebuild the educational system so that it itself motivates the students to intensive training. The Ukrainian educational system does not motivate students to systematical styding.

Regardless of how the pupils complete the primary school (even at "1" – "5"), they will be able to continue their education in high school and regardless of whether they graduate from high school, they will be able to continue their studies at a particular higher educational institution (124 according to the results of the external independent evaluation from non-profiled subjects – this is the lack of any knowledge of the subject, and 140 of the profiles – an estimate of "4"). At present, 82% of school graduates study in higher education institutions, and in Finland, for example, only 16%, in Germany – 30%. That is, our educational system is unnatural appropriate.

Tutoring became a shameful phenomenon in Ukrainian education: in graduating classes students instead of generalizing and systematizing knowledge of high school, attend tutors, practically not attending classes in school. The "stuffed fish"is referred to in the concept "New Ukrainian School".

Thus, an external independent assessment of bribes while joining an institution of higher education has created new contradictions, which will depend on both the quality of secondary education and the quality of higher education. Part of this problem will be solved by an external independent evaluation of the course for the main school, which is planned to implement this concept. However, as always in the long run. In our view, external independent assessment of pupils' achievements was initially required for primary school graduates, and then for secondary education. Moreover, it is necessary to establish a high standard of the overall score of the external independent evaluation, so that, in the academic field, only 40% of the graduates of the primary school study in high school, and the rest – have received professional education, and not for everyone it should be combined with the secondary education.

Is it possible "to balance even the role of school in the development of children" [2]. It can be argued if you do not use the principle of natural conformity. In fact, in school, one can and must continue to develop physically and intellectually every child in the genetic field that he or she has set. That is, equalizing the physical and mental development of pupils at school will not succeed in anything and never: children will remain different. We only need to maximally develop the physical and mental abilities of each student. Concerning the development of mental abilities, V.O. Sukhomlynsky wrote: "You are thinking about how much work you should spend on a teacher, cultivating mental powers and abilities, without which it is impossible to master this depth of knowledge" [8, p.424].

And yet one more intresting item: "Do not force to sit as much as possible over the book, but try to cultivate the mind, to develop the mental abilities of the child..." [8, p. 524].

It would be nice if the current and future school fulfilled the task assigned to it:

- identify and develop the abilities of each child at first in elementary school (paper cutting, sticking them, sewing and embroidery, modeling of plasticine, drawing, etc.), and then in the main (guys: basic wood operations (placement, planing, drilling), cutting, gluing, etc.), with metal (placement, sawing, cutting, drilling, etc.), electrical appliances (installation of electric circuits, installation of sockets and switches, etc.),as well as to plant and grow bushes and trees, flowers, vegetable crops, etc.; girls: basic operations related to sewing (sewing, flipping, sewing buttons, knitting, designing and sewing of simple clothes, embroidery, etc.), cooking (preparation of the first, second and third dishes, baking, etc.)
- In parallel with this, class leaders must work with a practical psychologist, on the one hand, to study the psychological and physical characteristics of each student, and on the other hand, psychophysical requirements for a particular profession in order to resonate them, then the choice of profession will be conscious and purposeful;
- It is obvious that after graduating from primary school, the graduate will be ready to choose her profession in accordance with such conditions, which corresponds to natural abilities, vocations and life needs.

In addition, life will make its own adjustments: new professions will emerge, a vast number of new factories will be built, some professions will be displaced by others, more technological processes will be saturated. Therefore, the entire school process should be directed at preparing students for lifelong learning. One of the leading approaches in the New Ukrainian School should be an activity approach.

It is good that "within the framework of the introduction of a competence approach a new system of measurement and evaluation of learning outcomes will be created. In particular, the content of the external independent evaluation will be changed "[2].

The current 12-point scale of assessment and approved by the Ministry of Education and Science of Ukraine Criteria for assessing academic achievements do not provide objectivity in the conditions of direct evaluation.

To make sure this is enough to try on the Criteria to objectively evaluate the student's response, for example, to "7" and "9" in geography.

7" – the pupil has sufficient geographical knowledge and applies them to solve standard situations; can provide a complete understanding of natural and social phenomena, is able to monitor the environment; enough map material.

"9" – the pupil has an adequate level of educational material, can apply it for practical work; has a clear idea of the components of nature and spatial organization of the economy; explains the causal relationships with nature and economy; almost without error works with map material "[3].

Is it possible to uniquely and objectively evaluate the student with grades "7" and "9"? What is the difference between "having sufficient geographical knowledge and applying them..." and "at the appropriate level, about the teaching material and usage of it..." or "possesses sufficient cartographic material" and "works almost unerringly with the cartographic material"? What is stronger: "enough" or "almost unmistakable"? and why for "almost error-free" knowledge, the score for two points is greater than for "sufficient" knowledge? And here it is impossible to blame the authors of the criteria: it is almost impossible to conclude unambiguous criteria for direct evaluation, if the scale is 12-points.

Thus, for the pupil's assessment to be objectively evaluated directly, both the teacher and the pupil need to know the criteria for each assessment that is impossible.

In addition, it is proposed to determine the grades for the subject, the semester as the average of the obtained estimates. However, grades have different weight.

It is also planned in the nearesr future to change the "content of external independent evaluation" [2].

In our view, it is necessary to change not only the content of external independent evaluation, but also some procedural components. The positive element of external independent evaluation is that has deprived of bribery in entering higher educational institutions. However it also brought to education a vast number of negative components, namely:

- the school has been occupied with the tutoring that currently performs, as a rule, a negative function (students do not systematically and systematically study in previous classes, with the hope that only a comprehensive tutor prepares them for external independent evaluation, that is, there is no motivation for intensive training for all years, knowledge which students try to get in a short period (a few months), are quickly forgotten and, according to university lecturers, students with high external independent evaluation points are not able to master the program of higher education;
- graduates, for the most part, rarely attend school. Their secondary education is not complete; teachers are forced to accept this condition, that is, the image of the school is constantly falling. In addition, teachers are not in the same conditions: only those teachers whose subjects are involved in the external independent evaluation can earn extra funds; teachers – tutors, as a rule, do not pay taxes);

- not proper organized schedule of conducting external evaluations tests (this year on 23rd May) also disrupts the synthesis and systematization of educational material in the graduation class; all conditions must be created to ensure that the academic year is complete, and the external independent evaluation must start not earlier than June 5;
- it is necessary to pre-examine the test tasks on the validity and reliability, do not offer in the course of external testing tasks related to the secondary educational material;
- prepare training manuals on all subjects, in which to focus the main educational material (theoretical and practical), based on which test assignments will be made);
- bring up to 170 passing points for entrance to the university from all subjects.

The pedagogy of partnership, which is the basis of the concept, calls upon subjects (teachers and students) and parents to respect mutual respect, benevolent attitude, mutual trust and dialogue. These requirements are universal and Christian, and therefore axiomatic for the educational process and humane pedagogy in general.

Another requirement of partnership pedagogy is the principles of social partnership, the spectrum of which, in our opinion, needs to be expanded considerably (legality, equality, democratic principles, voluntariness and reality of obligations, obligatory implementation of agreements, responsibility, control over implementation of agreements).

It is not difficult to replace the one-sided authoritarian communication "a teacher-a pupil" with dialogue and multilateral communication between pupils, teachers and parents.

The educational system needs to be designed in such a way that students who have "mind at the fingertips" have acquired labor professions, without which the economy can not function in any country. By the way, education reform envisages solving this problem by introducing an external independent assessment for graduates of the main school. According to its results, the graduates of the main school will be distributed for further study in two streams: academic and professional.

"The teacher should be your friend. This is an axiom. How can a child be in the classroom, perceive certain information if she or he learns from a person who is afraid? "[39]. A student should not fear the teacher, but respect him, in the end, as well as the other way round. Psychological and pedagogical science has proved that the educational material is better perceived and assimilated, if the class is trusting and there are good relationships between students and teachers, if the teacher does not scream, does not frighten pupils (parents, director). But it depends not only on the teacher, but also on the pupils. How to teach children who do not accept educational material or do not want to study is even worse when they do not want to and can not study.

"The Ukrainian school will be successful if it comes with a successful teacher. If he is a successful teacher and specialist – he will solve a lot of questions about the quality of teaching, the scope of homework, communication with children and school administration. A person-leader who can lead a child who loves his subject, which

teaches him professionally, should come to the children ", noted in the concept" New Ukrainian School "[2].

To fulfill the multifaceted conceptual task, you need:

a) create a new system of selection of well-trained graduates of secondary schools for study at colleges and universities;
b) make significant changes in the preparation of the teacher of high school in pedagogical higher educational institutions;
c) to build an effective system of professional growth of a teacher after graduating from a college or university.

To create a new system for selecting the best graduates of schools for studying at higher educational institutions, you need:

- in the 9th-10th grades it is necessary to introduce students to the future teachers' professions and, based on their results, form groups of students – future teachers;
- organize for these pupils' clubs: "Fundamentals of the pedagogical profession", "Creative features of the lesson", etc.;
- to organize pedagogical practice for pupils: test lessons, preparation of educational activities, animator in summer camps for students' recreation, etc. Of course, without decent wages it will be difficult to direct the best graduates of schools to pedagogical universities only with the help of pedagogical means. However, there are promising words in the concept: "Much attention will be paid to material stimulation," as well as "the reform provides a number of incentives for personal and professional growth to attract the best in the profession" [2].

Among the material things is not only the salary, but also the opportunity to increase it with the help of attestation (regular and extraordinary), as well as voluntary certification. In addition to material incentives, it is proposed to give the teacher academic freedom, he will be able to prepare his own author's curriculum, choose textbooks, methods, strategies, methods and means of teaching, express his professional opinion actively. The state will guarantee him freedom from interference in professional activities "[2].

V.O. Sukhomlynskii noted: "The spiritual wealth of the teaching staff is a constant exchange of values. Life is rife in a collective only when everyone gives something to his comrades. Without this spiritual return, life becomes a duty of duty "[8, p.477].

The direction of the team for the mutual exchange of universal and pedagogical values is obliged by the head of the educational institution. Appropriate installation from the head is required, as well as significant efforts to develop the core of the teachers, which will direct teachers to creative rethinking of the lesson, the search for new techniques, methods and forms of work, the use of effective teaching technologies, etc.

Currently, in Ukraine, the heads of educational institutions are appointed by the results of the competitive selection for 2 years, and then for another 4 years. After that, he can not claim the position of head of the same school. According to these innovations, VO Sukhomlynsky could not work for more than 20 years as director of Pavlitskaya secondary school and to create a new pedagogy. "Opening up the teacher's opportunities for creative research in the process of day-

to-day work is one of the tasks of the school leadership," noted V.O.Sukhomlynskyi [8, p.475]. It's good that the concept "the teacher will have the right to choose the place and method of advanced training" [39]. Today, many universities have licenses to improve the skills of teaching staff. A competitive environment is being created that will encourage Institutes of Postgraduate Education to increase the scientific and pedagogical level of training, get rid of formalism in their work.

Thus, in the concept of "New Ukrainian School", the new Law of Ukraine "On Education" has laid a lot of innovative ideas and provisions, the implementation of which will allow to bring to a higher level the training of a successful teacher wgo is "an agent of change" – and, consequently, the quality of education in general.

Conclusions

Education in Ukraine is being reformed since the beginning of independence. In 1991, the Law of Ukraine "On Education" was adopted. This law introduced significant changes in Ukrainian secondary education. In the first place, deideologization of the content of education from the dominance of Marxism-Leninism was carried out. The school began to study the true history of Ukraine, artistic works of repressed writers, and others like that. In the educational system there were new educational institutions: high schools, lyceums, colleges. Many of them had a long history. Schools were democratized, students had the opportunity to choose educational subjects from the variational part of the curriculum. The school used a differentiated approach. In senior grades it was allowed to profile teaching. The 12-point rating system (2000) and external independent evaluation (2008) were introduced. The content of education was updated in connection with the transition to 12-year studying. However, it was not destined. The pro-Russian government in 1212 closed this transition, leaving the high school 11 years old.

In 2018, the New Ukrainian School was launched in accordance with the approved concept "New Ukrainian School". The new Law of Ukraine "On Education" gave a legal start to new reforms in education. For the second time, the authorities are trying to increase the term of study in high school to 12 years. Many pedagogical innovations are borrowed from Poland: the appropriate integration of content in elementary school, the three-tiered structure of secondary education (elementary school, gymnasium, lyceum), the decentralization of the management of educational institutions, the provision of maximum autonomy to schools, activity and competence approaches in the educational process, the appointment of heads of educational institutions on competitive basis.

At the same time, much remains to be done in restructuring the educational system (basic schools and their affiliates), filling education with new content on a competent basis, creating a new system for assessing student achievement, introducing an external independent assessment for high school graduates, the establishment of a new teacher training system, the improvement of the certification of teachers, the creation of an internal and external quality assurance system.

Streszczenie

Artykuł naukowy potwierdza nową metodologię rozwiązywania sprzeczności w edukacji. Opiera się na następujących zasadach: tożsamości przeciwieństw w nieskończoności, przejściu od abstrakcji do konkretnego, interakcji dialogu,

różnicowaniu i integracji. Ponadto podstawą reform edukacyjnych powinna być zasada naturalnej zgodności, której podstawą jest krzywa normalnego rozkładu prawdopodobieństw Gaussa.

Prowadzona jest krytyczna analiza reform edukacyjnych na Ukrainie. Wskazuje błędy metodologiczne w ich realizacji. Równolegle przebieg reform edukacyjnych w Polsce i ich wpływ na reformę edukacji na Ukrainie. Na konkretnych przykładach pokazano, że niemożliwe jest mechaniczne przeniesienie doświadczenia z jednego kraju do drugiego, niezależnie od jego stanu początkowego i rzeczywistych warunków.

Słowa kluczowe: edukacja na Ukrainie, edukacja w Polsce, reforma, metodologia, zasada, proces edukacyjny, system edukacyjny, system oceny.

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Creation, strategies and tactics of technical creation

Introduction

Creativity is a human need because it helps adapt to changes in modern life. The development of society requires a creative orientation of the individual, a creative approach to problem solving and decision making, openness to change, activity, new behavior patterns, innovative behavior, creativity in all spheres of life. Most people avoid creative activity, engage in unproductive, stereotypical activities, do not realize their capabilities, although everyone (or almost everyone) has the potential to be successful in creative activities.

For the individual, it is important to develop not only to meet the needs, but in the creativity that makes work cease to be uninteresting, and implement the idea of equal life and social justice. It gives a sense of freedom and sense of life. Creativity is a guarantee of our quality of life, development of new technologies and growth of the economy. Activation of creative potential ensures the full social implementation of the individual, which in turn speeds up cultural and economic development in the country.

The fast pace of life creates situations in which algorithms of actions and standard solutions are most often used. This is generally rational behavior from the point of view of the effectiveness of operations. However, modern education should be innovative. 'The implementation of educational innovations is the key to the competitiveness of project nations in the future.' [1]. Young people must be able to anticipate changes and adapt to them on a personal and social level, have innovative thinking, so to achieve significant results in education, to survive in new conditions, teaching should be innovative and creative.

1. Aspects of creativity

Creativity is a response to the growing complexity and dynamics of the social environment. Therefore, modern teaching should aim at:

- preparing young people for creative work. Education of the individual with innovative thinking and behavior;
- training people, ready for social change, innovators, leaders, molding creative social behavior;
- self-development. Training a creative person – this is preparation for self-development, managing one's life, perfection in a chosen sphere of activity, self-realization, creating one's own personality.

[1] *Fenomen innovacij: osvita, suspil'stvo, kul'tura: monohrafija, Pedahohična dumka, Kyjiv, 2008, s. 7*

The stimulus of the activity of the innovative unit is the willingness to learn, the desire not only to receive ready knowledge, but the ability to think and analyze information independently.

The concept of innovative education is associated with the idea of transgressive education. Transgression makes it possible to change reality and in this sense connects with creativity, and in the case of positive transgression is its synonym. Creativity, therefore, is an expression of human transgression – 'expansive behavior that goes beyond the typical boundaries of activity, by means of which the individual creates positive and negative values that are a source of development and regression'[2]. The need for transgressive education results from significant changes in the modern world, the increase in the value of human life, technological and scientific progress. However, then new problems arise. In transgressive teaching of creative personality, productive methods are decisive: the implementation of convergent and divergent tasks, developmental didactic games, training seminars, training of creativity, and simulation modeling. A student using these methods demonstrates creative or expressive transgression, which goes beyond the limits of his educational achievements. Transgression develops the cognitive, instrumental, motivational, emotional and personal spheres of personality. The development of society requires a creative orientation, consisting of:

- a creative approach to problem solving and decision making;
- search and implementation of changes, openness to changes, activity, self-management and one's life.

Developing creativity – a special form of cognitive expansion – intrigues people from the very beginning. Creativity is not subject of rational cognition, based on reasoning, methodology and experience. Some scientists believe that the phenomenon of creativity can not be fully understood and experienced, it is impossible to build a unified theory of creativity and to recreate it with the world of personality. It is not so easy to understand the essence of the phenomenon of creativity, how difficult it is to create a psychological portrait of the creator with its unique qualities, abilities and skills that are needed to overcome the threshold of intrapsychic competences for which creative cognitive exploration into art or science begins.

The psychological approach to the study of the process of creativity involves the study of its relationship with mental activity (intelligence, memory, thinking, perception, intuition, imagination, the role of the unconscious in creativity etc). However, the reduction of creativity to the mental activity of a person does not allow to assess the diversity of this phenomenon. Contemporary psychology treats creativity as a phenomenon that manifests itself at various levels.

Based on the Ya. O. Ponomariow concept of creativity, pedagogy of creativity should be considered as a fundamental science – 'the field of general pedagogy, which absorbs the results of psychology of creativity'[3].

Ya. O. Ponomariow noted that for the introduction of the psychology of creativity as an abstract science to the pedagogy of creativity as a concrete science,

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[2] A.Horal′s′kyj, Teorija tvorčosti, – Kamenjar, L′viv, Universitas rediviva, Warszawa, 2002, s. 12

[3] *Pedahohična tvorčist': metodolohija, teorija, texnolohiji [V. P. Andruščenko, S. O. Sysojeva, N. V. Huzij, N. V. Kičuk]; za red. S. O. Sysojevoji, N. V. Huzij, NPU imeni M.P.Drahomanova, Kyjiv, 2005, s. 21.*

conditions for the development of effective transformative knowledge about creative activity are necessary, and the pedagogy of creativity understood as fudament science is part of the unity of abstraction and concrete.

S.O.Sysojewa defines the pedagogy of creativity as 'the field of general pedagogy, which examines the peculiarities, regularities of training the creative unit, development and self-development of creative potential in the learning process; creating psychological and pedagogical conditions to develop the creative potential of the individual in socially useful and individually significant areas of life'[4]. The tasks in pedagogy of creativity include the development of psychological and pedagogical concepts of self-improvement and the involvement of personality in the creative process[5]. The main phenomenon studied in the pedagogy of creativity is training the creative personality of the student in his educational interaction with the teacher. The process of training a creative personality can not be separated from the creative development of the one who teaches and educates, because it aims not only to consciously assimilate knowledge, skills, mold the worldview, behavior culture etc, but also to create immanent motivation, characteristic traits, creative skills, mental processes that promote the success of creative activities. Creativity development systems, criteria for the selection of content, principles of psychodidactics, methods and tools are subordinated to the main goal – to develop creative abilities of young people.

The pedagogy of creativity (pedagogy of ability)[6] is interpreted as art, and creativity is a generic feature of man and of humanity. On the other hand, it is a kind of craft or skill, or human action, in which there are traditions, masters, corporations, professional secrets and rules that can and must be taught. The lecturer (Master) is to have the ability to recognize non-verbal signals of his students, be aware of his own and students' style of thinking and to differentiate their impact on them. 'Pedagogy of ability is not an autonomous domain, it exists alongside pedagogy and seems to be independent of pedagogy, it is a kind of style of its behavior, educational position and a special kind of achievement.'[7]

The conditions necessary to develop creativity ща the youth are:

- care of talented young people;
- stability in the education of gifted youth, based on the relationship 'teacher – student';
- diversity, providing deep versatile knowledge and diverse skills;
- complementarity as a student's activity while performing tasks;
- the specificity of raising young people talented by recognizing the subjectivity, unity and originality of thinking and effort to create conditions that best promote creativity;

[4] S.O. Sysojeva, Osnovy pedahohičnoji tvorčosti, Kyjiv. Milenium, 2006, s. 112.
[5] Tamże s. 86.
[6] A. Horal′s′kyj. Pravyla treninhu tvorčosti, VNTL, L′viv, 1998. – 52 s., A.Horal′s′kyj. Teorija tvorčosti, – Kamenjar, L′viv, Universitas rediviva, Warszawa, 2002, 144 s., A.Goralski. *Wzorce twórczości (eseje filozoficzne i pedagogiczne),* Scholar, Warszawa, 1998, 113 s., *Szkice do pedagogiki zdolnosci* / Pod red. A. Goralskiego, Scholar Warshawa, 1996, 143 s.
[7] A.Horal′s′kyj. Teorija tvorčosti, – Kamenjar, L′viv, Universitas rediviva, Warszawa, 2002, s. 83.

- generativity as the pursuit of combining spirituality and pragmatism, the tendency to dream and cold calculation, which can be a generator of success in life, the implementation of creativity;
- increase in the creative achievements of the individual as well as the creative environment in determining the field of his activity;
- striving for self-fulfillment of students and teachers as a means of pedagogy of creativity and pedagogical skills.

Important questions regarding creativity pedagogy can be formulated as follows[8]:

- what are the anthropological premises of cretivity?
- what content and tools should be used to create creative skills?
- how to organize the process of preparation for creativity?
- what methods are present for implementing this process?
- what pedagogical principles are needed to implement this process?

Answers to these questions allow to define the main goal of pedagogy of creativity as preparation for the implementation of creative activity, generating knowledge in the field of bringing up children, adolescents and adults to creativity.

Among the tasks of the pedagogy of creativity, we distinguish: the development of creative skills, emotions and motivations, the construction of learning models of creativity and the study of the determinants of this process; shaping the structures of the creative value of personality, individuality, creative lifestyle, developing a creative attitude. From the point of view of the approach to activity, Jan Łaszczyk, defining the pedagogical subject of the subdiscipline, identifies the pedagogy of creativity with the system of practical activity, and not with the knowledge system and ways of its formation. [9]

W.N Drużynin emphasizes creativity among the general abilities – 'creative is not the one who first created the ideas, and the one who made meaningful connections, worked on understanding the idea, its function in relation to other elements of the semantic space of knowledge that exist in this culture.[10] ' Ye. P. Ilyin defines creativity as a 'subjective factor of creativity, systemic (multidimensional, multi-level) psychological creation. Creativity manifests itself in innovative transformations, in all (or some) areas of life (cognition, thinking, professional activities etc) at the levels: unit (potential) – process – result.'[11] Creativity is the foundation of a creative personality 'determinant of which the creative activity of the individual serves as an externally non-stimulated activity that relies on searching and processing' (S. O. Sysojewa).[12]

[8] J.Łaszczyk. *W kierunku pedagogiki twórczości*, Acta "Universitatis Nicołai Copernici. Pedagogika" // Twórczość, Środowisko, Edukacja, 1997, № XXII, s. 135 – 158.
[9] J.Łaszczyk *W kierunku pedagogiki twórczości*, Acta "Universitatis Nicołai Copernici. Pedagogika" // Twórczość, Środowisko, Edukacja, 1997, № XXII, s. 135 – 158.
[10] V.N. Drużynyn. Psycholohyja obščych sposibnostej. SPb.. Pyter, 2007. s. 201
[11] E.P. Yl′yn, Psycholohyja tvorčestva, kreatyvnosty, odarennosty, SPb., Pyter, 2011, s. 160.
[12] S.O. Sysojeva, Osnovy pedahohičnoji tvorčosti, Milenium, Kyjiv. 2006. s.124.

According to Ye. P. Ilyin, the concept of 'creativity' is slightly wider than the concept of 'creative potential' because 'creativity' has potential and current forms.

In the approach of W. O. Molako who uses the concept of 'creative potential', including skills, talents, talent and genius, that is, the whole spectrum of creative possibilities of a human being.

Among the specific elements of creative potential, such as general intelligence, interests, intuition, personal strategies and tactics of solving problems is creativity as the ability to combine, find analogies, reconstruct, tendency to change variants, effectiveness of solutions, rationality of resource use. The structural elements of creative potential include: the ability to reconstruct, find analogies, and the ability to think and behave in a non-standard way. An expression of the creative potential of W.O. Molako[13] determines according to the following criteria:

1) polyvariancy as the number of problem solving variants;
2) ingenuity, in particular as the speed of solving problems;
3) originality as a reflection of the identity of the individual who solves the problem.

Yu. L. Trofimow[14] interpreted creativity as a process of creating a new, useful product. In terms of the fundamental novelty of the product, he identified four levels of creativity:

1) the highest level characterizes the creative process, leads to a completely new result, new to all humanity. It is the work of excellent writers, artists, composers, inventions and discoveries that transform human life in various directions (from atomic bombs to penicillin);
2) the second level of creativity refers to a product that is new to a fairly large group of people in a given country or world;
3) the third level characterizes the novelty of a creative product for a limited group of people (for example, an innovative proposal);
4) the fourth level – the novelty of the product is subjective, relative, only relevant for the person who creates it.

S. O. Gruzenberg, examining the mechanisms of the creative process, emphasizes the rational and mystical conception of creativity. He distinguishes the following types of creativity[15]:

- philosophical (which contains two subtypes: gnosiological (cognition of the world thanks to intuition) and metaphysical (metaphysical content in a religious and ethical concept;
- psychological has two varieties: approximation to natural sciences related to creative imagination, intuitive thinking, creative inspiration and ecstasy, objectification of images, creativity of primitive peoples, crowd, children, creators of inventors (ewrology), unconscious works (in dreams etc) and the branch of

[13] Psycholohične doslidžennja tvorčoho potencialu osobystosti [monohrafija / nauk. ker. Moljako V. O.. Pedahohična dumka. Kyjiv, 2008, 208 s.

[14] Psycholohija [Ju. L. Trofimov, V. V. Rybalka, P. A. Hončaruk ta in].; za red Ju. L. Trofimova. Lybid′, Kyjiv, 2001, 560 s.

[15] Hruzenberh S. O. Henyj y tvorčestvo. Osnovy teoryy y psycholohyy tvorčestva. Krasand, Moskva, 2010. 264 s.

psychopathology (studies of genius and madness, influence of heredity, alcoholism, sex peculiarities, traits of mentally ill people and the media);

- intuitive – with ethical and historical – literary variations (aesthetic – revealing the metaphysical nature of the world through artistic intuition). The creative act is treated as an intuitive process.

W. M. Bechteriew believed that creativity is a reaction to stimuli, in particular the reaction itself and the elimination of the tension caused by this stimulus. The stimulus stimulates reflexes of concentration, which evokes mimic-somatic reflexes. The changes start in energy level, myocardial vessels and hormons that stimulate brain activity. Concentration with mimic-somatic reflexes creates a dominant in mental activity that causes changes in all other parts of the brain. With the restoration of the previous experience around the dominanta, all the backup material concentrates, which in one way or another concerns the stimulus – problems. At the same time, all other processes of mental activity, not directly related to the stimulus – the problem, are retarding. The choice of material, analysis and syntheses are made. For each work, according to W. M. Bechteriev,[16] a certain degree of aptitude and proper upbringing is needed, which allows training the skills of the activity. Such education develops the ability to manifest natural abilities, which results in an almost unqualified thirst for the creativity, the object of which – the environment in the form of nature, material culture and social environment. S. L. Rubinsztejn[17] applied the activity as an approach to procedural understanding of creativity. He emphasized the importance of personality research not only as an active one, but also as a creative object of activity. The creative process is the result of the conscious activity of the subject, and the abilities are molded as a result of the psychic connection of the subject's activity with the objects of his activity. The abilities manifest themselves, and they mold and develop themselves in the process of their implementation in achievements. According to S. L. Rubinsztejn, one can not deny the violence of the greatest discoveries, but their source – not intuition, not the kind of enlightenment that occurs without work. This is something that deeply falls into the eyes, a peculiar critical point separating the solved problem from the unsolved one. Going through this point is pretty much a jump. The violence, intuitiveness of creative activity most often manifest itself where the hypothetical solution is more obvious than the approaches and methods leading to it.

This is anticipation, foresight of the results of the mental work to be performed. But the scientist's intellectual activity according to the developed techniques of thinking is usually systematic, and prediction – this is mainly the result of a long prior conscious work.

A. Bruszlinsky believed that creativity is the main feature of any thinking, which is always searching, discovering, creating a new one, and therefore this process is creative. Every thinking is always at least minimal creative.

In the mind of S.O.Sysojewa, the basis of creativity is activity as 'creating a qualitatively new, which is distinguished by uniqueness, originality and socio-

[16] S.L. Rubinštejn. Osnovy obšej psycholohyy. SPb.. Pyter, 2000. 624 s.
[17] Tamże.

historical uniqueness'[18]. Creativity and activity are aimed at transforming the surrounding world. Creativity closely related to the sensual sphere of personality and manifests itself in the productive and reproductive relationship, including motives, relationships, views, experiences, self-awareness and other forms of manifesting human qualities. The motives are the stimulation of the mechanism of the creators. and ensuring creative personality development – 'the most important task of all global educational systems.'[19] A widespread interpretation of creativity arises from the information received.Therefore, a man cannot get to know the world and engage in any activity without being creative. Creativity manifests itself not only when writing artistic works, paintings, but also in what people see and hear. Such views are called pan-creationism. [20]

Creativity can be treated as an activity, the result of which is the products of creation (works of art, inventions, ways of perceiving the world, methods of activity), characterized by novelty and value (aesthetic, ethical, cognitive etc) at least for the person who creates. It is the creation of new cultural and material values, productive mental activity that brings non-trivial (qualitatively new, unobvious) results, productive mental activity that allows a new result to be achieved to solve some of the contradictions. A statistically rare, original, wondrous product that differs from those previously created is new. In addition, the creative product must perform certain functions, i.e. be useful. These two components are necessary in creativity. This means that the product of the activity can be considered creative if it is new and valuable.[21] Depending on the theoretical or methodological type of study of creativity, they distinguish various aspects of this phenomenon. Among them are:

- creativity as a product (the attribute aspect);
- psychological process (processual aspect);
- creative personality (the personological aspect);
- external factors that create conditions for the creation process (aspect of stimulants – inhibitors of creativity). [22]

The attribute aspect takes into account the features of the creation of creativity. “Creative is what is new and valuable.”[23]. “Creative is what is new and useful for a certain group of people at a certain time”[24]

Processual aspect: it is important how a creative idea arises, what processes cause the birth of a new and valuable product, it focuses on searching for the answer to the question about the characteristics that characterize the creators and / or attributes of the creative personality.

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[18] S.O. Sysojeva, Osnovy pedahohičnoji tvorčosti, Milenium, Kyjiv. 2006. s.124.
[19] Tamże, s.12.
[20] W.Tatarkekiewicz. *Dzieje sześciu pojęć sztuka, piękno, twórczość, odwórczość, przeżycie estetyczne*. Ossolineum. Wrocław, 1982. s.305.
[21] R. J. Sternberg. *Defying the Crowd Cultivating Creativity in a Culture of Conformity.* The Free Press, New York. 1995. s.11.
[22] K. Szmidt. *Pedagogika twórczośc.* GWP. Gdańsк. 2012. s. 61
[23] A. Góralski, *Być nowatorem. Poradnik twórczego myślenia*, PWN, Warszawa, 1990, s. 5.
[24] M. I. Stein, *Creativity and culture*, Journal of Psychology, 1953, nr 35, s. 311 – 322.

Personological aspect: focus on what people create, what psychic properties they must necessarily have to achieve creative. The approach to creativity in the aspect of a person is of great importance for pedagogy – training appropriate features, ensuring optimal development conditions.

The aspect of stimulants – creativity inhibitors focuses on the factors conditioning the creation process, analysis of the conditions in which creative activity takes place or should take place. The conditions of creativity all factors influencing the arising, content, intensity, course and results of creative activities. Internal conditions – subjective: knowledge, motivation, value system, intellectual skills, other psychological environments of the individual. External conditions – social: material factors, technical factors, social factors, cultural factors. Stimulators – positive factors. [25]

Thus, at present, there is no unambiguous interpretation of such a multidimensional concept of creativity. Because the parameters of creative potential refer to the characteristics and abilities of the individual, we assume that the concept of 'creativity' refers to personality, and the creative potential as the ability to interpret all information, reflection and training – personal life experience is the right thing for each person.

W. S. Rotenberg[26] proposed a criterion that allows to distinguish true creative achievement (in science and art) from his most skilful imitation, calling the effect of astonished recognition. When a person encounters something new and unusual, especially in an area in which he has some personal experience, the first reaction should be discrepancy, protest. New or completely different from existing knowledge and imagination, it causes doubt (which causes a protective reaction) or is not considered new at all. And if suddenly, unexpectedly for the man himself, the third variant appears – receiving a new one without protest – it means that in the deep subconscious (or rather at the level of the picture) this knowledge or imagination has already been created although it has not reached consciousness. This is best answered by the sentence: 'For which I did not notice it before (I did not understand, I did not think etc)'. A sense of astonished cognition arises. Astonishment is a sign that a man actually guessed it, but he did not know anything about it, which is an essential feature of the truth of the discovery.

2. Creative abilities

The ground for developing abilities according to W. Molyako are 'anatomical and physiological innate tendencies, based on the process of various activities, trainings, and work – both general and specific abilities develop'[27].

Each person has an individual set of abilities, therefore the presence or lack of stimulation for its development and implementation is decisive. The definition of abilities is characterized by special skills (management, practice), that is, the needs of

[25] R. Schulz, *Twórczość – społeczne aspekty zjawiska,* PWN, Warszawa, 1990, s. 329.
[26] V.S. Rotenberh, Psychofyzyolohyčeskye aspekty yzučenyja tvorčestva /Psyxolohyja chudožestvennoho tvorčestva. Charvest.Mn, 1999. s. 569-593.
[27] *Psycholohične doslidžennja tvorčoho potencialu osobystosti:[monohrafija / nauk. ker. Moljako V. O.. Pedahohična dumka. Kyjiv, 2008, s..20.*

modern society, outstanding achievements in all possible fields of activity (not only intellectual). Individual abilities develop through the interaction of three elements of the psyche: cognition, emotions and motivation. On their basis, intellectual and special abilities (in particular – creative) are trained, which may not be updated.

The definition of abilities applies to individual and psychological peculiarities, which are subjective conditions for the effective implementation of a certain type of activity and specific features (a combination of certain features, characteristics) that allow a certain level of creative activity to be achieved. It is a difficult task to distinguish between abilities and knowledge and skills that can significantly substitute abilities. Creative abilities are associated with intuition, holistic perception of information, as well as with emotions. The development of abilities is the result of a combination of basic components of abilities, which include: general and special abilities, motivational and personality factors, as well as the main environmental factors. 'The reality is ontological. It is rooted in the fundamental foundations of human existence, and at the same time it is the basis of all human abilities.'[28]

Immanent motivation is the most important for creativity, that is, the motivation that stimulates a person to act for themselves, instead of waiting for a certain reward, satisfying ambition or showing superiority over others. Outstanding creators are guided by immanent motivation, so the individual receives satisfaction from the process of acting. Such activity is treated as an end in itself. A special case of immanent motivation is the so-called autonomous cognitive motivation.

Another important motivation for creativity is the need to improve (refine) reality. Students may be unmotivated, uninterested, passive, inclined to self-affirm, oppose, prioritize structured tasks, clearly defined form of control by the teacher or be motivated, focused on discussion and work, with the desire to be able to influence the content and learning process. Important motives of creativity are instrumental, gaming, professional, managerial, communicative and others. Questions motivating activity is always valid. Speaking of 'ideation, creativity and innovation as the value of modern society and a condition for training individuality, we in fact agree that the basis for social development is the development of human ability. This means, for example, the respect of the individual finally depends on whether at the right time a man developes his own fortunes, discoveres his abilities and after all achieves the level of abilities, talent etc. '[29].

In the psychological and pedagogical literature more and more often new concepts related to creativity and abilities appear. For example, it concerns emotional intelligence and intuition. Emotional intelligence is a system of traits that combine abilities, motivation and perseverance in the process of achieving a goal, the ability to master impulsivity, mood regulation, understanding the mood of other people, an optimistic view of the future. Such a set of attributes has a greater impact on our lives than the intellect. The basis of emotional intelligence is self-awareness – understanding emotional states. People who recognize their own emotional states and other people cope better in life. Mastering one's emotions, emotional self-control is

[28] *Fenomen innovacij: osvita, suspil'stvo, kul'tura: monohrafija, Pedahohična dumka, Kyjiv, 2008, s. 7*
[29] *Fenomen innovacij: osvita, suspil'stvo, kul'tura: monohrafija, Pedahohična dumka, Kyjiv, 2008, s. 260.*

the basis of all achievements. Establishing interpersonal contacts is the ability to manage the emotions of other people. We emphasize that there is a correlation between intelligence and emotions, but very poor. Intuitive thinking is mostly demonstrative and subconscious. People who have intuition immediately understand the problem, although they can not prove it yet.

There is no close relationship between the two aspects of creativity, namely the concept of 'creativity' as a procedural result, embodied in creative works and 'creativity' as a set of general and specific creative abilities. On the other hand, scientists distinguish such a concept as 'inspiration', which stimulates the process of creation. 'A person who is in a state of creative inspiration, has a strong influence on other people, can often convince them, induce them to their thoughts, ideas, to lead with them.'[30]

The relationship between the level of intelligence, knowledge and creativity is complicated. At first glance, it is obvious that storing a large amount of information in the memory helps to find different approaches to performing tasks. However, pedagogical experience shows that a large amount of knowledge sometimes leads to a stereotypical solution to the problem. That is why '... a high (or even too high) level of intelligence does not guarantee creative achievements. You can be an intellectual and not become a creator'.[31] Creative abilities and intelligence become independent factors in the conditions of a high level of intelligence (IQ more120). There are no creators with low intelligence, but there are intellectuals with a low level of creativity.

Study of the dependence of intelligence – the work of M.S. Yegorova proved that '... the level of intelligence in old age depends to a certain extent on creativity at a younger age, but not vice versa. Creativity and intelligence continue to affect each other, but the effect is delayed, and therefore to see it only in world-wide comparisons (for example, creativity in 6 years and intelligence in 7 years.'[32] Such research results are an additional incentive to the development of creativity.

According to W.O. Molako, creative work is complex in an intellectual area, and education in the conditions of creative activity to a certain extent guarantees success in less complicated conditions in the future, as well as constant focus on rationalizing your work, improving its quality and efficiency. [33]

3. Methods of development of technical creativity

The W.O.Molako's method KARUW is designed for structural and functional transformations as well as the use of the main strategies in technical creation (combinatorial activities, analogue search, reconstruction, universal strategies,

[30] *Psycholohija / [Ju. L. Trofimov, V. V. Rybalka, P. A. Hončaruk ta in].; za red Ju. L. Trofimova. Lybid'. Kyjiv, 2001, 331 s.*

[31] V.N. Družynyn, Psyxolohyja obščyx sposibnostej, SPb., Pyter, 2007, s.171.

[32] M.S.Ehorova, Sopostavlenye dyverhentnыx y konverhentnыx sposobnostej kohnytyvnoj sferы detej, // Voprosы psyxolohyy, 2000, # 1, s. 45

[33] V. O. Moljako, Roboča koncepcija stratehičnoho ta taktyčnoho podolannja kryzovyx naukovo-osvitnix problem (psyxolohični rakursy// www.lib.iitta.gov.ua/709430/1/Moljako_stattja.pdf, [data dostępu: 20.10.2018]

resultant exchanges) and tactics (interpolation, duplication, reproduction, convergence, deformation) and integration of the basic part, autonomy, sequential subordination, shifting, differentiation) of constructive activity.

W.O.Molako has identified five main technical strategies for creativity, namely:[34]

1 – searching for analogues (analogy strategy);

2 – combinatorial operations (combining strategy);

3 – reconstructive activities (reconstruction strategy);

4 – universal;

5 – random substitution.

1. The strategy of searching for analogues associated with the use of a known structure or its part and the function when creating a new device. Newly created item must contain something new or be used in new conditions. Creating a new construction can be associated with such analogs that exist in nature. Of course, artificially created constructions can be very different from their live analogs.

2. The strategy of combinatorial operation means using various mechanisms together and their functions to build a new construction. Combinatorics is associated with different permutations, decreasing and increasing in size, changing parts in an already existing structure.

3. The strategy of reconstruction is related to the rebuilding as an antagonistic one – it is a rebuilding or more strictly constructing the reverse. For example, the direction of rotation or type of transmission may change, the rectangular part may be replaced with a round one etc. It can be concluded that reconstruction is the most creative approach associated with the search for a truly new one, different from the one previously used. Of course, the scope of creativity will be different: only one detail can change in the device, but you can rebuild the entire structure.

4. Universal strategy is associated with a relatively equal use of analogy, combining and to some extent reconstruction. This is a variant, when the action is such that it is difficult to give an advantage to one of them.

5. The strategy of random substitutions. There are cases where it is generally difficult to determine the nature of an entity's actions when there is no dominant tendency, and the search is done as if blindly, without a plan, or at least neither the subject itself nor the external observer can establish such logical connections.

Each strategy can be implemented in the form of a synthesis or analysis.

The psychological characteristic of the KARUW system is education with the use of impeding conditions. Therefore, special methods are used:

1. *The time constraint method* takes into account the significant impact of the time factor on mental activity. Without a time limit, the entity finds several options for solving the task, thoroughly rethinking its activities, as well as the quality and structure of the objects sought. In the limited time the subject either limits the use of what he or she knows best (most often it is the use of a template variant), or decisions to a certain extent are deformed. Through the type of these deformations one can determine the general tendencies of human mental activity. People react

[34] *Zdibnosti, tvorčist', obdarovanist': teorija, metodyka, rezul'taty doslidžen' [red. V. O. Moljako, O. L. Muzyky], PP. Ruta, Žytomyr, 2006, c. 24.*

differently to time constraints. In some cases, the limitations increase the activity and get even higher results or changes in behavior, decrease the results and not always achieve the result. Limited time causes inhibiting, shock, that induces doubt, panic and quick refusal to complete tasks.

2. *The method of sudden prohibition (MSP)* consists of prohibiting the use of certain mechanisms in some of its structures. This method is also quite effective, because it destroys stereotypes, eliminating the possibility of using well-known types of devices, nodes and parts. So certain styles of activity, related to specific techniques and specific mechanisms are quite naturally trained by constructurs. The use of MSP will contribute to their ruin. Adaptation to the application of this method is related to the reappearance of these trends in activities that are habitual and usual. The use of MSP promotes the development of the ability to change their activities depending on the specific circumstances.
3. *A quick sketching method* is necessary to diagnose specific features of mental activity. It is possible to suggest a continuous 'drawing' of the reasoning process – presentation of all constructions. Thanks to this technique, it is possible to more accurately determine the transformation of images, to determine the concepts and visual images of the given structure. It accustoms to greater control of their activities, regulation through images of the process of creation.
4. *The method of new variants* consists of the necessity of different problem solving, searching for new variants of problem solving, which always leads to the increasing of the activity, creative search. This method can be scanned at any stage, and not only after finding a solution (in a sketch version). Then this method can become both a kind of sudden ban method.
5. *The method of lack of information* is used in the case of the need for a special activation of operations at the first stages of problem solving. In this case, problems are reported with a significant lack of initial data necessary to run the solution. Thus, there may be one or more functional and structural characteristics of the initial data (direction of motion, speed of rotation). An important modification of this technique is the use of various forms of presentation of the initial state. Particularly, you can offer tasks, initial conditions of which are presented graphically or only in text form. The method is particularly effective in studying the peculiarities of understanding while discovering available knowledge.
6. *The method of informative supersaturation* is based on the conscious inclusion of unnecessary information to the initial conditions of the task. A variation of this method is a tip administered orally and containing unnecessary data that diverts attention from useful information. The teacher decides how to apply the method: to propose the choice of the relevant information or not to say that there is an excessive amount of information.
7. *The absurd method* consists of a specially proposed task that can not be solved. A typical option for absurd tasks is to build an eternal engine. You can also promote problems that are relatively absurd (for example, suggest a device design that can be used for a different purpose than required at the beginning). It helps to fight with thinking templates and creatively approach problem solving.

8. *The method of situational drama*, depending on the specific pedagogical idea and process of solving the problem, introduces some changes in the process of solving. These changes are designed to impede the activity and can be very diverse – from the teacher's question ('question-plus') to different requirements not provided to ordinary procedures. The sudden ban method is a variation of this method. Each of these methods can be combined with others and have various modifications.

W.O. Molako's research has shown that training of creative strategies becomes an important indicator of a person's mental education.[35]

Conclusions

The creative activity of people, their specific actions, which characterize the specificity of thinking, only partially depend on the conditions and for the majority reflect the personal settings, the subject's strategies and their style of creative activity. The training of constructive creative thinking, strategy and tactics of creative activity through creativity training is based on the regularities of creative activity of professional employees (engineers, teachers, doctors etc), takes into account the specificity of creative work, includes the main techniques of existing methods of stimulating creative activity and can be used on any stage of the creative process as an effective means of stimulating creative thinking. That is why the basic forms of creative education are the following: systematic solving various creative problems through a special training of creativity, maximum aesthetization of all forms of life activities, from habits of accuracy to achieving world culture, participation in creative circles. The strategy for the development of science and education in contemporary conditions includes: creating alternative existing planning centers and hierarchical systematisation of priority research; creation of regional professional scientific sub-centers with problem solving in particular sciences, preparation of personnel, performing special (including psychological) research on revealing the creative potential of man, upbringing, psychological rehabilitation, optimal use of science, technology, work culture and everyday life achievements; implementing programs for the development of science, education and culture, in particular through a wide network of creative groups with different profiles.

Modern education should be innovative. The stimulus of the activity of the innovative unit is the willingness to learn, the desire not only to receive ready knowledge, but the ability to think and analyze information independently. Creativity is a response to the growing complexity and dynamics of the social environment. The development of society requires a creative orientation, based on a creative approach to problem solving and decision making; search and implementation of changes, openness to changes, activity, self-management and life.

[35] V. O. Moljako, Roboča koncepcija stratehičnoho ta taktyčnoho podolannja kryzovyx naukovo-osvitnix problem (psyxolohični rakursy// www.lib.iitta.gov.ua/709430/1/Moljako_stattja.pdf, [data dostępu: 20.10.2018]

Abstract

Modern education should be innovative. The stimulus of the activity of the innovative unit is the willingness to learn, the desire not only to receive ready knowledge, but the ability to think and analyze information independently. Creativity is a response to the growing complexity and dynamics of the social environment. The development of society requires a creative orientation, based on a creative approach to problem solving and decision making; search and implementation of changes, openness to changes, activity, self-management and life. They distinguish various aspects of creativity: attributive; processual; personal and logical; stimulants – inhibitors of creativity. The training of constructive creative thinking, strategy and tactics of creative activity through creativity training is based on the regularities of creative activity of professional employees (engineers, teachers, doctors etc), takes into account the specificity of creative work, includes the main techniques of existing methods of stimulating creative activity and can be used on any stage of the creative process as an effective means of stimulating creative thinking.

Key words: education, creativity, innovation, creativity training, methods, tactics, pedagogical technologies.

Streszczenie

Współczesna edukacja powinna być innowacyjna. Bodźcem aktywności jednostki innowacyjnej jest chęć poznawania, pragnienie nie tylko otrzymywania gotowej wiedzy, a zdolności do myślenia i samodzielnej analizy informacji. Twórczość jest odpowiedzią na rosnącą złożoność i dynamikę śJrodowiska społecznego. Rozwój społeczeństwa wymaga orientacji twórczej, polegającej na podejściu twórczym do rozwiązywania problemów i podejmowania decyzji; poszukiwaniu i wdrażaniu zmian, otwartości na zmiany, gętkości w działalności, zarządzaniu sobą i swoim życiem. Wyodrębniają różne aspekty twórczości: atrybutywny.procesualny; personologiczny; stymulantów – inhibitorów twórczości. Kształcenie konstruktorskiego myślenia twórczego, strategii i taktyki dsiałalności twórczej poprzez trening twórczości opiera się na prawidłowościach działalności twórczej pracowników zawodowych (inżynierów, nauczycieli, lekarzy itp.), uwzględnia specyfikę dsiałalności twórczej, obejmuje główne techniki istniejących metod stymulowania twórczej aktywności i może być wykorzystywane na każdym etapie procesu twórczego jako skuteczny środek stymulowania myślenia twórczego.

Słowa kluczowe: edukacja, twórczość, innowacya, trening twórczości, metody, taktyka, technologii pedagogiczne.

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An improvement of maintenance of education is in relation to forming of professional competence of future managers of physical culture and sport

Introduction

From the review of long-term experience INSTITUTE of higher of Ukraine, experience of oversea countries, with the developed market economy, the necessary terms of forming of professional competence of future specialists is exactly integration of maintenance of their studies.

Integratio is the only one introduced by integer – tsiliy, – integration; nim. integration) – the process of knowing the identity and value of any parts of the system, narrow-mindedness of the elements in the whole system, de facto specialized elements of the system, so that the process and result of the process are the same.[1] In order to create a whole series of cases of identical elements and sharpened parts from the earlier ones (visions of activities, initial objects) are to be isolated. From the point of view of pedagogical sciences, the integration – the process of intermingling of sciences, not one firing of one, but the unity of the early Isolation elements, in whose case the primary component of distillations is synthesized by the system[2].

Encyclopedic dictionary defines integration as a concept, which means the state of combining certain differentiated parts and functions of the system into a single whole, as well as the process that leads to the state of mutual convergence of science, which passes simultaneously with the processes of their Differentiation.

Attempts at Integrative learning have a long history. Already in the 1920s, integration of the was carried out through the implementation of a comprehensive approach to the construction of curricula and programs, expansion of inter-disciplinary relations.

Since 60s, when all countries of the world have been seeking ways to improve the content of education, adequate to the objective requirements of scientific and technological and social progress, integration becomes independent. The main searches of researchers in this direction have intensified at the end of the 20th century and today they are the main requirement in the process of forming the professional competence of future specialists.

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[1] Great explanatory dictionary of contemporary Ukrainian language (with additional, additional and CD) / layout. and heads edit VT Buzel – K., Irpin: VTF "Perun", 2009 – 1736 p.

[2] Soviet Encyclopedic Dictionary / Ed. AM Prokhorov – 2nd ed. – M.: Soviet Encyclopedia, 1980. – 1600 pp.

Rebuilding the content of education is an urgent challenge to the present for specialists from different fields and the demand of modern society. A peculiar attention needs to be a problem regarding changes in the system of training and improving the quality of training of future specialists in the field of Physical Culture and Sport. Therefore, the system of training specialists in this field, and in particular the future manager of physical culture and sports, is characterized by the construction of a long educational process, based on which modern means, methods and forms of training organization, innovative technologies are based.

A graduate system of professional education in the field of physical culture and sports should provide a society with specialists of different educational levels and professional orientation, the need for which is due to changes in the socio-economic situation in Ukraine. This, for its part, requires a careful review of the existing system of organization and content of training of future managers of physical culture and sports, which should be directed to the formation of their skills and skills for practical problem-solving.

1. ntegration of the content of the training of future managers of physical culture and sports in the process of studying specialized disciplines

It should be noted that today knowledge is regarded as the potential that experts must possess, the main thing is the effectiveness of their activities in real conditions, therefore one of the ways of modernizing education is the introduction and implementation of the integration content of training. Such integration can balance the main contradictions in education, namely, the differences between overload of knowledge and limited human resources. Historical experience shows that it is impossible for anyone to give the appropriate education based on a separate science isolated from other sciences, and the integration itself provides an organic combination of different educational subjects around one topic. It is this innovation that introduces new conditions for the cooperation of students and teachers, which will improve the effectiveness of students' perception of educational material.

Scientist Y. Komensky[3]drew attention to the need to "always and everywhere take together what is connected with each other." He stressed the need for an integrated approach to the organization of the educational process: "All knowledge grows from one roots – the surrounding reality, have ties with each other, and therefore should be studied in ties." As can be seen from the history of science, the main path to the modern content of learning lies through the integration of educational disciplines, which bridge the bridges between traditional specialties and thus act as a kind of framework that unites separate objects into a single whole. The more content of the training will be integrated, the more it will meet the criterion of simplicity and economy (parsimony), which was also formulated by English scholar William Okkam[4] and known as the "Okkam Razor."

[3] Komensky Ya.A. Selected Pedagogical Works / Ya.A. Comenius – Moscow: Enlightenment, 1955. – 627s.

[4] Ockham William. Types of knowledge. Universal / William Ockham // Anthology of World Philosophy: In the 4th Century – T.1.- Ch.2. – M., 1969. – P. 891-907.

Since the integrated education system is still not well understood, it is not always perceived by teachers. However, its theoretical substantiation and practical implementation is the future of the future. Integrated learning sets new standards for collaboration between teachers and students – this will be an active model of activating intellectual activity and learning techniques that help students to disclose themselves as individuals with their own goals and needs. Integration requires the use of innovative forms of teaching aimed at effective student perception of the educational material, it will help all its participants (teachers, students) to collaborate and interact, bringing them closer to the common goal. Consequently, it contributes to the use of various forms of learning, such as computer science, coaching, mentoring, facilitation, edutainment. [5] [67]Indeed, modern pedagogical science considers integration as one of the main didactic principles.

The introduction of integration into the educational process of future managers of physical culture and sports is relevant, because it helps:

- to combine similar material of various subjects around one topic and eliminate duplication in the study of a number of disciplines;
- to optimize knowledge that will help to acquire knowledge with less time, but will generate equivalent theoretical and technological skills;
- to acquire students a significant amount of study material and to achieve the integrity of knowledge;
- motivate students to gain knowledge, self-development;
- to form personal growth of the student, the disclosure of abilities, cognitive capabilities;
- to provide students with the practical application of acquired knowledge from different disciplines for future professional activities.

In our opinion, the implementation of the integration of the content of training future managers of physical culture and sports in the process of studying the professional disciplines should be aimed at mastering their conventional management methods and technology management in practical sports activities, which will facilitate their successful activities. The content of the training of these professionals should be built as a single target program focused on the end result, rather than as a spectrum of autonomous autonomous disciplines. Each individual discipline should be considered as a separate part of the integrated integral content of a versatile training of a specialist to its activities.

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It is clear that the content of education (what to teach?) Is precisely the main factor that reveals other areas of the learning process (how to teach?). If the emphasis is placed on the requirements of graduates of sports schools, then, first of all, the integration of the content of training should be applied and the source material revised to organize this process.

In order to choose the qualitative content of education as a component of the system of requirements aimed at creating the professional competence of the future manager of physical culture and sports, it is necessary to solve a number of tasks related to the choice of content of integrated educational disciplines, which will include a cycle of general education disciplines and professionally oriented.

A significant consequence of integration will be that it will promote generalization, consolidation and growth, the information capacity of scientific knowledge, that is, separate concepts of laws and theories will pass into the rank of general and will allow to explain more number of specific properties and connections.

An important content characteristic is the degree of integration, which establishes the degree of changes in the integrative content. Let's consider several levels of integration, namely, from inter-subject interactions to active interaction and practical use of acquired knowledge in professional activities. The gradation of integrative processes using the three levels is quite common. [8]The first level is low, the set of elements does not change here, the structure is kept. But along with this, complex concepts, holistic representations and generalizations are created, which facilitates the possibility of organizing the interaction of various educational disciplines. The second level – medium, involves the complex interaction of elements. The third level – high, which provides a rebuilding of the existing content of learning, applying innovative approaches that will facilitate the expansion of the boundaries of academic disciplines.

The methodology of the formation of the best selection of educational disciplines for professional training of managers of physical culture and sports, which exists at the present time, explains exactly how it is to be done:

- to determine the necessary functional structure of professional activity of a specialist in accordance with his level of qualification[9];
- define the structure of the generalized object of activity;
- to highlight elements of the aggregate structure of vocational training;
- to reveal the content of each of the elements of the structure, etc.

Therefore, the improvement of the professional competence of the manager of physical culture and sports should take place, taking into account the content of education of the personal component, namely: strengthening the formation of the professional orientation of this specialist; creation of a holistic system of his professional training (basic knowledge); formation of creative thinking (individual methods of activity). This can be done by reorienting the focus of this training

[8] Tjunnikov Yu.S. Polytechnical bases of preparation of workers of a wide profile: method. allowance / Yu.S. Tunnikov – M.: Higher school, 1991. – 192 p.

[9] Volyanyuk N.Yu. Modern aspects of professional training of specialists in physical culture and sports / N.Yu. Volyanyuk // Pedagogics, psychology and medical-biological problems of physical education and sports. – 1999. – No. 19. – P.34 – 36.

through the integration of the content of the disciplines and the logical construction of curricula, the sequence of formation of all its components, which should form the professional competence of future managers of physical culture and sports.

2. Form of training of future managers of physical culture and sports

A traditional form of student training is a lecture. It is the most effective and time-saving way to transfer and learn learning information, since the teacher selects and systematizes the most important, most valuable. This helps the student to get the right approach to studying the discipline and understand the main thing. But it is impossible to study any discipline only as a lecture material, since the lecturer does not provide information in full, but selectively. Therefore, the introduction of special courses that go beyond the curriculum, significantly expands scientific knowledge, facilitates their creative thinking, "introduces" students to an in-depth perspective on the acquisition of professional competence[10].

The purpose of the practical (seminar) class is the formation of the students' methodical skills and the minimum experience in their professional activities. The leading form of training of future sports managers should be quasi-professional, which involves the reproduction in the auditorium of the dynamics of real professional activities. As for the classification of seminars, among them stand out:

- problem seminar, which involves solving problems, overcoming difficulties, contradictions in the contents of educational material;
- a seminar aimed at a thorough examination of the nodal issues;
- Special research seminar on specific problems of a specific discipline;
- seminar – expanded conversation;
- seminar – discussion;
- seminar – protection of reports;
- seminar – compilation and systematization of knowledge, etc.

An active form of conducting a seminar is a discussion. Discussion (from the Latin Discussio – consideration, research, search of truth) – discussion of the issue (problem) of contradictory nature in order to find the truth. During the discussion, the opponents are colleagues in the group. Thus, they do not reproduce the knowledge acquired by the teacher, the author of the manual or the textbook, but demonstrate the knowledge that they gained independently through the analysis of additional literature and lecture materials, through the tasks for independent work that required the student to compare the characteristics of different methodological approaches.

Great attention is paid to this form of study at higher education institutions in the UK. As noted by British experts, discussions have the following advantages[11]: generates scientific thinking; forms critical thinking in students; teaches students to express and reason their own opinions; teaches to listen to each other, namely to hear what is said; promotes spontaneity of communication, because in order to conduct a

[10] Thorzhevsky D.O. Methodology of professional training / Д.О. Tcherzhevsky – K.: DINIT, 2000. – 242 pp.

[11] Fedina M. Features of the main forms and methods of teaching at the University of the Great Britain: [Electronic resource] / M. Fedin. – Mode of access: www.nbuv.gov.ua/ portal / Soc_Gum / Pippo / 2009_6 / Fedyna.htm.

constructive discussion, it is necessary not only to logically build a thought, but also correctly form their judgments. Important conditions for a discussion, as a thematically focused dispute, may be such as: participants must be prepared for discussion; each of the participants in the discussion should have clear laconic theses of his speech; It is allowed to practice the "warm-up" of the discussion to activate it; it is important that the discussion is aimed at establishing the truth, and not on a hasty contest between the participants.The controversy about the meaning of the discussion is (from the Latin Disputare to argue, reason) – a public dispute over a social or scientific topic, thinking about one idea and discussing it. The debate produces openness, freedom, sincerity in the statements of the participants. Has no grouping between participants. Collective discussion is underway[12]. Each student (participant in the dialogue) expresses his or her own opinion on the subject of discussion, namely, shows his attitude to it, gives motivational arguments, which contributed to the formation of his point of view, illustrates the theoretical facts by facts and examples. During the debate for performances there is no regulation.

3. Innovative methods of teaching for the formation of practical experience of students

Among the active forms of training in the training of managers of physical culture and sports, scientists note the introduction of gaming practice that will help with the probable opportunities of the game in addressing managerial, practical and other problems that will arise in the future[13]. After all, games contribute to the formation of knowledge, their transformation into a practical plane, namely the development of personality and consciousness, the formation of critical, creative thinking and abilities of the student. The most important feature of gaming technology is that it has great potential for implementing an educational effect in the educational situation.

The main types of games are used in the training of future managers of physical culture and sports. Their use is systemic or occasional. In view of the first case, he must develop a game complex of games consisting of the main types of games. If we consider the second case, but it is relevant at present, the teacher offers one or maximum of two or three types of educational games in the educational process. For the logistics of game types, an important criterion is the degree of problem created in the game, and its relationship with the main forms of the organizational learning process (problem-situational, decision-specific and information-solving).

The scientist N. Suvorov [14] considers that it is expedient to include in the program of practical classes such forms of training as: brainstorming, case studies, role games, etc. It is a professional improvement base, including thoughtful professional discussion, search and decision making. The researcher A. Panfilov

[12] Smetansky M.Methodological bases of activization of educational and cognitive activity of students / M. Smetansky // Way of education. – 2000. – 4. – pp. 9-13.
[13] Sukhomlinsky V.O. Hundred counsel to a teacher // VO Sukhomlinsky Selected works: [5 t.]. – K.: Rad. school, 1976. – T.2. – 634s.
[14] Suvorova N. Interactive learning: new approaches / N. Suvorova // Innovations in education. – 2001. – №5. – p.106-107.

[15]among the interactive technologies of conducting seminars defines the following: business games; methods of activating educational activities, which include analysis of specific situations, in particular case method, heuristic technology for generating ideas – method of brainstorming, training, etc. Interactive gaming technologies in the learning process of future sports managers are built on a focused, specially organized group and intergroup activity of students during the training, to provide feedback to them to achieve mutual understanding and adjust the process of this event, to stimulate the individual style of their communication on the basis of reflexive analysis of a certain educational problem. They have two main features: the first one is a game character, the second is the ability to interact with the subjects of the learning process.

What role in "business games" play during the seminar of future managers of physical culture and sports? They, as a form of training, are used when solving the tasks of their professional direction, namely, consolidating the old material and mastering the new, to identify gaps in knowledge, for self-control, which contributes to the development of reflection. Business game – is a reflection of the substantive and social content of future professional activities of the manager, modeling of those communication systems that are specific to this activity[16]. It is one of the most effective tools for transforming theoretical knowledge into an element of practice, a kind of bridge between the training and future professional activities of the manager of physical culture and sports. Regarding the modification of the business game, it includes: simulation games, during which they work out peculiar technologies, methods, operations and procedures in simulated situations. In the training business game, the future sports manager is trained to perform quasi-professional activities that encompasses both training and future professional activities. The student acquires abstract knowledge, skills and abilities of his future profession, which is considered in the practical sphere of their professional activity.

According to K. Vishnevsk, the main feature of the business game, is "modeling, which is as close as possible to real professional activity"[17]. This guarantees the implementation of the principle of compliance training with regard to the requirements of modern society. Therefore, it helps to thoroughly develop business qualities of students and in the complex to form the necessary knowledge and skills, to acquire the skills of creative use of theoretical knowledge on the implementation of certain economic situations. In the process of gaming activities in future managers, according to A. Petrov[18], produced the following groups of

[15] Panfilova AP Ichrotechnical management / AP Panfilova // Interactive technologies for training and organizational development of personnel: Textbook. way. – SPb: IVESEP, "Knowledge", 2003. – 536 p.

[16] Yavorska Zh. Business games and their role in the training of modern specialists / Zh. Yavorska // Visnyk of Lviv University. – 2005. – No. 19. – P. 315-320.

[17]Vishnevskaya K. simulation, role-learning as a process of increasing economic communicative culture of students of high school / Pedagogy K. Vishnevskaya // middle and high school. Zb sciences works Issue 11. – Kryvy Rih: KPUU, 2005. – P. 211-216.

[18] Petrova A.I. Formation of foreign competence of future managers of foreign economic activity in the process of professional training: diss.... Candidate ped sciences : 13.00.04 / Petrova Anastasia

professional qualities:

- managerial (organization, initiative, flexibility, ability to take advantageous solutions for organization, evaluate and predict steps of real competitors, ability to justify risk);
- personal (erudition, autonomy, confidence in own actions, responsibility for professional steps and decisions, ability to persuade and settle disputes, critically evaluate own forces and possibilities, knowledge of business etiquette);
- communicative (fluency in the native and foreign languages, ability to form and communicate to the partners the main professional ideas, the ability to clearly and succinctly argue their own position), etc.

One of the simplest ways of involving each of the participants in a seminar in a collective exchange of thoughts while working on a topic is a round. This is a technology where all students turn their thoughts within a limited time (1-2 minutes), in relation to the subject of the lesson, or the question posed. The problem or issues that are being considered in the round can be offered as a preliminary task as a homework assignment or occur directly during the class.

Another popular form of interactive training for future managers of physical culture and sports is the practice of solving situational tasks using a case-method. Case-study, or case-method, is a study that uses a description of real-life situations[19]. This technology is a system in which the teacher-communicator and students can be identified. Important features of the case-method in the formation of professional competence of managers of physical culture andport is its cognitive and communicative aspects. Case-study technology is implemented through the use of situational learning, which is the basis of real examples that are taken from practice and requires the student to seek a focused solution in the situation that he was offered. According to M. Kademie[20], the use of case-study technology helps students develop skills such as:

- analytical: the ability to conduct content analysis, namely, to find information, to classify, to select information without superfluous noise, to analyze it, to systematize, to think clearly and clearly;
- practical skills: to overcome the problems enclosed in the case (approach to real situations), to promote the development of the skills of using the theory, methods and principles in practice that will allow to overcome barriers of complexity;
- to defend their point of view;
- analyze different points of view and make the right decisions.

Thus, the case-study form of the classroom is important for the formation of the professional competence of future managers of physical culture and sports.

One of the active forms of conducting practical classes can be considered a "brain attack". According to V. Nagaev[21], the main principles of the brain attack are

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Ivanivna. – Vinnytsia, 2009. – 268 p.

[19] Situational Analysis, or Anatomy of the Case Method [ed. Surmin Yu.P.] – K.: Center for Innovation and Development, 2002. – 286 p.

[20] Kademiya M.Yu. Using Interactive Learning Technologies / M.U. Cademia // The theory and practice of social systems management. -2013.- No. 3. – P.125-129.

[21] Nagayev VM Methodology of Teaching in Higher Education: Teaching. manual / V.M. It's over.

as follows:
1) the prohibition of criticism (the expression of any thought without fear that it will be recognized as wrong);
2) to support any initiative;
3) strive for a large number of ideas;
4) combine, change, expand, improve all the ideas offered, etc.

Among the benefits of this form of training, the application of the technology of brain attack is to enhance the imagination and creative potential of future managers of physical culture and sports, their ability to collect as many opinions as possible about the object of study in a limited time. This technology encourages students to demonstrate creativity and creativity, gives them an opportunity to express their thoughts.During this form of training, professional qualities and qualities of future managers of physical culture and sports are formed, which will help them to become specialists.

An important form of conducting classes with future managers of physical culture and sports is a training designed to give or update knowledge and skills, check their attitude to the problem. It is clear that solving new problems for the entire system of education can not be based solely on classical forms and methods of studying in higher educational institutions. In view of this, scientist Y. Schwalb believes that training aimed at the formation and development of professional competence and they should become one of the main means of professional training[22]. The introduction of training in the learning process, according to scientists, is an important component of vocational training, which should form the appropriate skills and abilities; that this is an actual curriculum in which students set (train) systems, methods, processes, phenomena of future professional activities, etc[23].

It is of considerable interest for the organization of training sessions with the managers of physical culture and sports research L. Bondareva[24], in which the training is an active educational activity of students, during which they decide the exercises designed according to their future professional activities, under the direction of the teacher, as moderator, using specially prepared instructional materials that meet the current requirements of professional activity. In addition, the main role of the training is to build organizational training structures, models of business incubators and training companies, and provide consulting services during the planning and organization of entrepreneurship and business.

– K.: Education, 2007. – 222 p.

[22] Shvalb Yu.M. Target approach to the construction of training training in the university // Psychological training technologies: scientific and methodological and organizational-practical problems of introduction and use, prospects of development: Materials of the international scientific and practical conference, Donetsk, May 27-28, 2005. – Donetsk: DUI, 2005.-p.186-191.

[23] Perspective concepts for updating the professional training of specialists in physical education and sport: collection. monograph / AV Sushchenko, AV Svatyev [and others]; [in general edit AV Sushchenko]; The state higher teach institution "Zaporiz. nats un-t ". – Zaporozhye: ZNU, 2014 – 378 p.

[24] Bondareva L.I. Training training as a means of training future managers of organizations in economic universities: author's abstract. dis for the degree of Candidate Degree. ped Sciences: special 13.00.04 "Theory and Methods of Professional Education" / L.I. Bondareva – K., 2006. – 21 p.

Experimental psychological studies show that only 10% of people perceive heals, 50% of what they see, 70% of what they say, and 90% of what they do. Therefore, the basis of the training of future managers of physical culture and sports is a participatory approach – the involvement of all those present in the learning process. The advantages of the training are that during its conduct:

- theoretical knowledge is combined with practical actions;
- the subject experience of each of the participants increases and the acquired experience is demonstrated;
- there is no control and evaluation of knowledge in the standard form;
- voluntary participation in the training;
- training takes place during the game;
- for all learning conditions are equal;
- the situation is informal, comfortable, safe, democratic;
- the relationship between the teacher-moderator and the participants in the training is equal, trustworthy and polite.

The modern educational process in the system of training future managers of physical culture and sports, its forms of conduct is impossible without the use of information technologies that help these students to quickly find the necessary information using the Internet or a repository, to study the teaching material using the technologies of distance learning. Also, with the help of information technology, teachers prepare presentations, which are projected through a multimedia projector on the smart board, etc., which are learning tools.

E. Lavrov and N. Bartchenko believe that information technology in education is not just a learning tool, but also qualitatively new technologies in the training of future competitive specialists[25]. However, the unresolved part of this pressing question remains the analysis of the main directions of innovation in the process of training future managers of physical culture and sports as a pedagogical problem.

The importance of forming the information competence of the future manager of physical culture and sport is that it is an integral part of his professional activity and for the successful entry into the profession of a sports manager in the context of the tasks facing the ZWO. Therefore, its formation enhances the competitiveness of the future manager of physical culture and sports in the domestic and world labor markets. Future managers of physical culture and sports should be free to navigate the information space, search for professionally valuable information, be able to solve professional tasks using modern information technologies.

The criteria of the informational culture of the future manager of physical culture and sport should be distinguished such as: scientific, educational, professional need for information; search of necessary information in information resources; evaluation of received information; processing information and creating own information; high level of information competence and computer literacy, etc.

[25] Pedagogical almanac: Collection of scientific works 2012. / red. VV Kuzmenko (head) and others. – Kherson: KVNZ "Kherson Academy of Continuing Education", 2012. – Issue. 14. – 307 s.

The training of future managers of physical culture and sports with the help of information technology can be used for the following purposes: to prepare their independent work on electronic media; using a computer, they receive consultations and receive assessment of the results of the training with the help of a remote expert (teacher); before them the possibility of timely continuous receipt of electronic educational materials opens; They are given the opportunity to use the educational Web resources at any time and from any place of knowledge.

The application of innovative information technologies helps to transform the training style of managers of physical culture and sports in a rational manner, to guarantee them quick access to various information, and so on. Note that one of the important social consequences of the development of computer science is a sharp increase in the creative content of classes, expansion and satisfaction of students' information needs, automation of their activities, etc.

But it should be noted that the training hours devoted to the acquisition of information technology in accordance with the curriculum of training managers of physical culture and sports is not enough.Therefore, in our opinion, it is necessary to introduce into the cycle of professional and practical training of the educational-professional program of future managers of physical culture and sports discipline, which will meet the modern requirements of informatization of higher education, namely physical culture.

Special attention is paid by modern educators to web quest technologies (Web-Quest)[26]. The educational Web quest (quest – from the English – search, search) is called an Internet site that highlights a topic and consists of several related sections, which include a large number of links to other Internet resources. The web quest in pedagogy is a task to fulfill what you need to use information resources of the Internet. Web quest is a technology that is focused on independent work of students, which can be done individually, in pairs or groups at a certain interval of time[27]. According to R. Gurevich: "Web quest is an interactive process in which students independently acquire the necessary knowledge in various search engines, receive a sufficiently large amount of information, analyze, systematize and perform a further presentation"[28].

The scientist L. Shevchenko defines the following types of tasks for web quests, namely[29]:

- a translation, through which the student demonstrates the understanding of the topic by submitting materials from different sources in a new form, creates presentations, reports;

[26] Goncharova I. The use of web-quest technology in the educational process / I. Goncharova // Methodical Bulletin. – 2016. – No. 10. – P.54-60.

[27] Dodge B. Some thoughts about web-quests : [Electronic resource] / B. Dodge.– Mode of access : www.webquest.sdsu/about_webquests.html.

[28] Gurevich R.S. Web quest as an innovative learning technology in high school and high school / RS Gurevich, M.Yu. Cadmium // Bulletin of Taras Shevchenko National University of Lviv. – 2011. – No. 21. – P. 45-50.

[29] Shevchenko L. Application of web quests for the formation of cognitive activity of students / L. Shevchenko: [Electronic resource]. – Access mode: www.nbuv.gov.ua/portal/Soc_Gum/Pippo/2011_3/Shevchen.htm.

- self-knowledge – is a study of personality;
- planning and designing – a plan or project is being developed under specified conditions;
- research – processing and researching various facts from unique on-line sources;
- compilation – transformation of the format of information received from different sources;
- analytical task, here emphasis is placed on the search and systematization of information received from different sources;
- creative task – creative approach to video creation;
- reaching consensus – defining a problem and creating a solution to its solution;
- belief – influence on opponents or neutral-minded persons and their rejection to their side;
- detective, puzzle – based on contradictory facts, conclusions are drawn;
- productive research – is a statement of information, dividing it into facts and thoughts;
- assessment – justification of their point of view.

The technology of this form of learning, as a web quest, helps to use Internet information resources and integrate them into the learning process, to shape the professional competence of future managers of physical culture and sports through the use of ICT (information and communication technologies). What will help them solve their professional tasks in the future, such as:

- search for the necessary information and present the results of their work in the form of (websites, computer presentations, databases, etc.);
- self-organization and team work (distribution of functions, planning, mutual control, mutual assistance);
- the ability to find several ways to solve a problem situation, determine the priority option and be able to justify your choice.

Exclusive importance in the process of forming the professional competence of the future manager of physical culture and sports is devoted to the development of independent work of students, "because the best method of teaching no one invented since the days of Socrates"[30]. It is known that in the majority of western countries, the basis of study is independent work of students.

With regard to definitions of independent work, their essence is reduced to the following provisions[31]:

- it is purposefulness, internal motivation, structured approach of the student's activity, which minimizes the direct assistance of the teacher (the teacher acts as a consultant) and fulfills the educational tasks that facilitate the acquisition of knowledge, skills and skills and form the student's cognitive independence;
- this is the planned work of students, which is carried out on tasks for the

[30]Levsky T. Higher education will become more accessible [Electronic resource] / T. Levsky // Government portal: Social policy. – Access mode: www.kmu.gov.ua/control/ publich / article? Art_id.

[31] Vnukova N.M. Strategy for strengthening students' independent work in the context of Ukraine's accession to the Bologna Process / N.M. Vnukova, VM Pivovarov, V.I.Usalalenko // Materials of Intern. sci. pract. Conf., December 14-15, 2004 – Kharkiv, 2004. – pp. 8-10.

methodological management of a teacher (teacher-tutor), but without its direct participation;
- this is a way of organizing and implementing students with a certain cognitive activity.

Recently, in sports universities of Ukraine, about 60% of academic hours are allocated to independent work of students, which is justified. Since, by performing an independent work, the student not only acquires methodological knowledge and skills, but also forms a valuable attitude to the subject of activity. An important condition for the success of the independent work of future specialists in physical culture and sports is the formation of their steady interest in the chosen profession and methods of mastering its peculiarities, which depend on the relationship between the teacher and students in the educational process. In carrying out independent work, the future specialist has the opportunity to develop cognitive and executive abilities, independent thinking, memory, discipline, persistence and develop the ability to independently acquire knowledge, etc.

Taking into account that nowadays considerable attention in the educational process is paid to self-studying of students, the problem of using the technology of projects as a way to achieve the didactic goal through revealing a problem and its detailed elaboration, which will be completed with practical result, is actual[32]. Scientist V.Guzeev[33] in the study focuses on a person-oriented approach and highlights such features of the project technology, as: self-motivation – it's interest in work, obtaining results due to personal interests, level of training, abilities; experience, namely training on own experience and experience of colleagues in a definite case; Self-satisfaction is a positive emotion of students after receiving a real product of personal work.

The technology of the projects is aimed at giving all students the opportunity to realize their professional plans and creativity. Using the design technology in the training of future managers of physical culture and sports can gain the following positive features, such as:
- the motivation for learning is formed, in particular, the interest in teaching methodology of professional disciplines and personal capabilities in solving educational problems deepens;
- the focus is on the process of self-knowledge, namely the achievement of the goal;
- the orientation skills are formed in the modern information space, and so on.

The key feature of the project technology is the development of cognitive skills of future managers of physical culture and sports, such as: to independently filter and systematize the theoretical material in accordance with the tasks, generalize and integrate the knowledge gained from different sources during theoretical and practical training and presentation of the obtained results.. Participation in designing helps to develop student's creative abilities, initiative, communicative, organizational ability, ability to self-determination and purposefulness, etc.

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[32] Milash O. Modern Pedagogical Technologies and Their Role in Improving the Efficiency of the Educational Process in Higher Educational Institutions / Oksana Milash // Horizons. – 2016. – No. 2. – C.25-30.

[33] Guzeev V.V. Planning of educational outcomes and educational technology / VV Guzeev – M.: People's Education, 2000. – 240 p.

The urgency of the technology of projects as a type of research activity of students, due to the fact that today design is becoming the most popular type of intellectual activity of future specialists in all sectors: in the social-educational, economics, science, industrial and cultural, etc. Creative project activity is not only a form of learning of knowledge, skills and abilities, it helps to ensure the independent allocation and making necessary decisions in future professional activities[34].

The work on the project, rightly emphasized by O. Romanishin[35], combines the independent individual activity of the student with group, pair and frontal creative activity in solving a certain problem that requires the ability to identify the problem, to predict ways of its solution, to plan the sequence of actions, to obtain the necessary material, discuss and systematize it and, finally, the ability to present the project to the general public.

Research projects are oriented on the solution of a scientific problem, which covers the explanation of the relevance of the topic, the purpose, objectives, object and subject of research, methods of research and problem solving, discussion and declaration of the results. This project can be considered successful under the following conditions: a clear definition of the purpose of the project; substantiation of the planned results; confirmation of the initial data.

We consider design technology based on the integration and direct application of the knowledge of students acquired during practical project activities, one of the most productive pedagogical technologies in shaping the professional competence of future managers of physical culture and sports.

An exclusive role in shaping the professional competence of future managers of physical culture and sports is played by such a form of training as professional practice, which aims at applying theoretical knowledge in practice, acquiring professional skills and professional experience, and mastering the mastered management technologies. The content and organization of the practice of future sports managers is based on the following important points: professional orientation, connection with the subjects of specialized disciplines; development of professional thinking, personal orientation; formation of independence taking into account realities in future professional activities.

Educational practice should familiarize students with the peculiarities of the future profession, to obtain the initial professional skills and skills from the general-professional and special disciplines, which are envisaged by the curricula corresponding to the specialty. The purpose of technological practice is to familiarize students-practitioners with work in organizations and establishments of a sports profile, working out of skills and skills in accordance with the future profession and chosen specialty. This will enable to consolidate the knowledge gained during the study of theoretical disciplines and the acquisition of initial practical experience.

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[34] Grishaeva O. Project activity as a means of forming the competence of the individual / O. Grishaeva // Methodical Bulletin. -2016. – No. 10. – p.30-35.

[35] Romanishina O.Ya. Theoretical and methodological bases of formation of professional identity of future teachers by means of information technology / thesis for the degree of Doctor of Pedagogical Sciences 13.00.04 – Theory and Methods of Professional Education / AJ Romanishin-Ternopil, 2016. – 482 pp.

Conclusion

Based on the analysis of the requirements for the professional activity of the manager of physical culture and sports, one can conclude that he as a manager does not need to get acquainted with the basics of managerial sciences, and an in-depth study of managerial disciplines, including those integrated – in close connection with professional problems, content of disciplines on the basis of modular construction of educational process.Thus, we have proved the need to integrate the learning process of future managers of physical culture and sports in order to form their professional competence by introducing an integration approach in the organization of pedagogical technologies, in particular, innovative, aimed at the effective implementation of the content of their professional training.

In general, in our opinion, the formation of professional competence of future managers of physical culture and sports will be more effective if the implementation of the methods will take into account all pedagogical conditions. Based on the above, it can be argued that there are many methods that help to reform the learning process of future managers of physical culture and sports from the usual way of conducting lectures and interviewing at a workshop in an interesting action close to the practical plane, during which future specialists will be able to master practical skills.. The teacher himself can choose the most convenient and effective methods of activating the educational process according to the students, the audience, the hours scheduled for training, and discipline, etc.

It should be noted that today the most promising forms of training future managers of physical culture and sports are the innovations of mixed learning: integrating remote and traditional technologies that allow you to move to a new level of training physical culture and sports, who are fluent in professional activities and well-oriented in adjacent areas, ready for cooperation and interactive interaction in the conditions of the modern labor market and the requirements of society.

Thus, in general, forms of interactive learning are some of the most flexible technologies for integrating each student into work, providing them with the experience of transition from simple to complex tasks, training future managers of physical culture and sports to use not to acquire theoretical knowledge, but to receive them from their own experience, and it develops thinking, both creative and dialectical. Innovative approaches to the organization of modern forms of learning make the educational process of future managers of physical culture and sports interesting, diverse and effective, and the most valuable in such training is that the profile discipline is increasingly beginning to appeal to them and promotes the formation of the necessary professional competence in them.

Abstract

Attempts of integrative learning have a long history. Integration is carried out through the implementation of an integrated approach to the construction of curricula and programs, the expansion of interpersonal relations. Improvement of the professional competence of the manager of physical culture and sport should take place, taking into account the content of the education of the personal component, namely: strengthening the formation of the professional orientation of this specialist;

creation of a holistic system of his professional training (basic knowledge); formation of creative thinking (individual methods of activity). This can be done by reorienting the focus of this training through the integration of the content of the disciplines and the logical construction of curricula, the sequence of formation of all its components, which should form the professional competence of future managers of physical culture and sports. Among the active forms of training in the training of managers of physical culture and sports are methods such as business games, brainstorming, training, case-method, projects, etc. With these innovative teaching methods, the student quickly acquires professional competencies that will be useful in fulfilling the professional responsibilities of the manager of physical culture and sports.

Keywords: pedagogical conditions, integration of teaching, innovative teaching methods, manager of physical culture and sports.

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Theorety and practice of formation of professional linguistic competence of future social work specialists

Introduction

Today in Ukraine there are radical changes in all spheres of life, including in the educational sphere. The system of higher education is intended, first of all, to provide high-quality professional training for higher education students, to form them as highly skilled, competitive specialists for various spheres of social activity and public life. In this regard, one of the main tasks facing higher education institutions is to create necessary and sufficient conditions for efficient organization of the educational process and effective educational activities of students for a future specialist to be able to fully realize his/her personal and professional potentialafter the completion of training, to become conscious patriot of one's country.

High proficiency in different languages and, first of all, perfect knowledge and command of the state language ensures comfortable professional activity of any specialist. Students, especially onesmajoring in humanitarian disciplines, experience the most urgent need for a thorough linguistic education, as speech in their further professional activities serves as a source and carrier of information, a means of successful fulfillment of their functional duties, influence on other people and achievement of personal goals.

At present, there are many issues regarding the formation of professional language training for social work specialists, namely: students generally lack sufficient level of language competenceon the basis of studying educational disciplines, especially professionally oriented ones; unconscious surzhyk, due to the Ukrainian-Russian bilingual population; negative influence of mass media, television, radio and the Internet, which promote utilizing abnormal vocabulary; a noticeable decrease in quality of domestic printed products and an increase in the number of printed products primarily in Russian; insufficient level of rhetorical education of social workers which significantly reduces their image and rating among other specialists; significant decrease in thenumber of intelligentsia in a society that is the main bearer of the Ukrainian languagewithin last years.

In our opinion, nowadays it is extremely important to create a system (model) in higher education institutions which would optimize the content of the organization and management of the process for formation of professional speaking competence of students and teachers. Accordingly, there is a need for objective reassessment of the outdatedpedagogical, information and communication technologies and introduction of modern ones, as well as study of possible areas and ways to improve quality of

professional speech training for higher education graduates, in particular future specialists in social work.

Organization of appropriate educational linguistic environment in institutions of higher education and obtaining of bachelor's degree in social work focusing on a high level of professional language competence will facilitate successful implementation of specialists' professional expertise, professional self-education and development of the competence of speech among general population.

1. The essence of professional linguistic competence in future social work professionals

Todayattention of the scientific community to the problem of competence is due, above all, to the reorientation of higher education towards formation of basic competencies, as a reflection of unanimity of knowledge, skills and abilities of future specialists. This has led to intensification of scientific research and study of competence as a subject matter. Retrospective analysis of scientific works shows that problems of formation of the language and speech competence of future specialists in different spheres are considered in the works of such domestic researchers as:K. Balabanova, N. Bidyuk, G. Bogin, V. Borisenko, A. Vardanyan, T. Gannichenko,T. Gorokhovskaya, A. Zagnitko, L. Zosimova, K. Klimova, O. Kovalenko, O. Kovtun, O. Kopus, M. Kravets, K. Kruty, M. Orap, Y. Paskevskaya, O. Semenogh,N. Skibun, I. Sokolova, L. Sikorskaya, N. Totka, G. Shelehova and others.

N. Babich, L. Baranovsky, A. Belyaev, L. Holovat, N. Golub, N. Kostritsa, M. Kryshtanovych, L. Luchkina, L. Matsko, L. Mamchur, V. Momot, A. Nikitina, T. Okunevich, L. Palamar, M. Pentilyuk, E. Polataj, L. Romanova, L. Strugants, L. Sushentseva, N. Totskaya. O. Shtepa, S. Shumovetsky and others offer pedagogical technologies for formation of the culture of professional speech for students of higher educationinstitutions.

In dissertation papers by L. Baranovsky, G. Beregovoy, O. Bugaichuk, A. Vardanyan, L. Vasetsky, L. Holovatoy, G. Horin, O. Gridzhuk, N. Kostritsy, K. Likhacheva, L. Luchkina, T. Okunevich, N. Totskaya and others the main issues of formation of professional competence competence of higher education students are revealed and corresponding innovative educational models, methods and technologies are offered. However, unfortunately, today there is no unified model or technology for the formation of professional language competence of students of humanitarian specialties and pedagogical conditions of their formation have not been determined.

Current social economic and political state in the country, prolonged military operations in the East of Ukraine have complicated life of Ukrainian citizens. It is the social life today that needs new progressive approaches to the development of the social sphere and the improvement of professional training of specialists in social work.

Social work specialist is a person who in accordance with the requirements of higher education standards must possess a set of personal qualities and professional competencies to perform a specific type of social activity. S/he must have a high level of professional language competence, including knowledge of language norms, as well as knowledge of sciences that investigate speech and behavioral patterns.

Educational process and direct formation of professional and linguistic competencies of Bachelor students majoring in social work are based on relevant qualification requirements and educational programs.

Language education of future specialists in social work is intended to accomplish the following main tasks: to form student's ability and skills to freely express thoughts in all kinds of speech activities (speaking, listening, reading, writing) and in various spheres of communication (personal, professional, public, educational); to master culture of speech; to develop professional language competence of a person.

The term "linguistic competence" was introduced by an American scientist Noam Khomsky who interpreted linguistic competence as perfect knowledge of the speaker-listener of one'snative language.

In our opinion, linguistic competence is a purposeful process of mastering fundamentals of language science, theoretical (phonetic, grammatical, lexical) knowledge, practical skills in analyzing the phenomena and facts of speech, and skills of free operation with them.

The Law of Ukraine "On Higher Education" provides the definition of competence as a "dynamic combination of knowledge, skills, ways of thinking, views, values, other personal qualities which determine the ability of a person to successfully socialize, carry out professional and / or further educational activities."

The scientist O. Gridzhuk understands competence as an integral qualitative characteristic of student'spersonality, basis of which consists of knowledge, understanding, awareness, experience of social and professional activity; as student's ability to work efficiently, approach non-standard solutions to problems and situations arising in various spheres of life. We share the author's opinion that linguistic and communicative competence is ability to use norms of the Ukrainian literary language in the field of scientific and professional activities, appropriate level of communicative skills, ability to analyze one's own and foreign expressions, knowledge of professional discourse, value attitude to language.

In "Great Explanatory Dictionary of Modern Ukrainian Language", ed. by V. Buzel's,the notion of competence is defined as "informativeness, awareness, credibility", "sufficient knowledge in a particular field", "knowledge, wisdom", "availability of certain powers", competence as "good knowledge" and "authority of a particular organization or person" [13, 632].

We fully share the opinion of the scientist L. Solovey that the term "professional competence" means concrete results of the educational process, the level of professional knowledge and skills and their effective use, professional experience, the system of value orientations of a specialist, his/her attitude towards people and work, ability to self-education and acquisition of new knowledge, effective possession of various ways to solve problematic and cognitive tasks, etc.

Structural components of linguistic competence are as follows: lexical competence (presupposes availability of a certain amount of words within the limits of professional development and their appropriate use); phonetic competence (involves correct pronunciation of all sounds and possession of intonational means of expressiveness of speech (tempo, timbre, voice, logical emphasis, etc.); grammatical

competence (includes formation of grammatically correct speech in practical setting of a specialist), diamonological competence (involves attention to development of dialogical and monolithic speech); communicative competence (aimed at development of speech communication, speech etiquette and ethics, norms of communication).

Summarizing the works of the aforementioned authors, we can formulate the following definition: "Language competence is comprehension and mastering of generally accepted language norms and their adequate application in professional activities."

Thus, scientist A. Bogush, under language competence, understands ability to adequately and appropriately use language in specific situations (to express their thoughts, desires, intentions, requests, etc.), to use both linguistic,extralinguistic (mimicry, gestures, movements) and intonation means of expressiveness of speech.

A. Vardanyan defines professional language competence as a quality of a personality which "integrates personal communicative qualities, knowledge of a languagesystem, possession of linguistic concepts and means, culture of communication in both social life and professional sphere, awareness of personal needs, values orientations and motives of communication and development.

Speech competence involves continuous improvement of communicative skills in main types of speech activity – listening, speaking, reading and writing; ability to plan their speech and non-speech behavior, ability to apply stylistic diversity of one's mother tongue.

We also fully share the opinion of Kryshtanovich M. that teacher's professional and pedagogical competence is a complex combining professional knowledge, skills, readiness for action, as well as a whole range of professionally important personal qualities (creativity, mobility, communicability, tolerance, balance, responsiveness, benevolence, desire for self-knowledge, self-development, self-realization, self-reflection, and others).

Summarizing scientific interpretations of key terms of the research, we understand the professional competence of a social work specialist as his/her ability to use language norms efficiently and effectively to achieve goals and objectives defined according to specific professional and communicative situations.

Language competence characterizes possession or lack of the norms of speech genres, and speech competence refers to norms of verbal and nonverbal communication. Language and speech competence correlates in the same way as language and speech – language as a sign system, and speech is a way of using a specified system.

Consequently, linguistic competence is a prerequisite for establishment of speech competence, and speech competence is determined by a subject entity which contains knowledgeof language and speech. Speech competence is a broader entity, which also contains language competence. Speech competence is the basis for formation of communicative competence. Means of its formation are speech skills.

The content of professional linguistic competence is the following: knowledge of accuracy, adequacy, correct use of linguistic means, knowledge of peculiarities for

using linguistic means, depending on the type, style of speech, knowledge of the features of figurative and expressive language means.

To achieve the professional speech competence of the bachelors majoring in social work, the following main tasks have been identified:

- ✓ to promote mastering of categories and units of language, functions, comprehension of laws and norms of its functioning, scientific knowledge about peculiarities and specifics of the design of professional speech of a future specialist;
- ✓ to teach students to solve complex professional and communicative speech problemsduring educational processfor them toact professionally in non-standard situations;
- ✓ to form personal and professional qualities through active and targeted influence on motivational aspects of their educational activities, to raise moral readiness of graduates to work in the social sphere;
- ✓ to develop cognitive, scientific and personal interests in a professional field they chose, to promote self-education and self-improvement;

The analysis of content has allowed us to identify another significant problem – presence of certain disadvantages in the content of current educational programs, manuals and textbooks, such as:

- ✓ the content of the discipline "Business Ukrainian language" was more in line with the content of the discipline "Business";
- ✓ more attention is paid to peculiarities of the official-business style of the Ukrainian language; at the same time, other, not less important language styles, including scientific, colloquial were left out of attention;
- ✓ formation of written languageskills and literacy improvement dominated; the basis of the course constitute spelling practice;
- ✓ features of oral speech were given insufficient attention;
- ✓ excessive attention was paid to processing of business papers that had a reproductive character and did not contribute to formation of linguistic individuality of future specialists;
- ✓ specifics of the future professional context have not always been taken into account.

Program material, exercises offered in the educational-methodical literature, were calculated for all students of ahigher education institution without taking into account specific characteristics of a particular industry.

Textbooks and manuals on"The Business Ukrainian Language" focused on students of technical specialties, did not properly form professional language competencies of other future specialists. Although in most of the manuals, first of all, such as: "The Official Business and Scientific Style of the Ukrainian Language" (by N. Botvin), "Ukrainian Business Speech: Professional and Unprofessional Communication" (by A. Zagnitko, I. Danylyuk), "Modern Ukrainian Business Language for Professional Purpose" (byM. Zubkov), "Ukrainian Language for Professional Orientation" (byY. Chornenky), "The Ukrainian Language of Professional Communication" (by Z. Matsyuk, N. Stankevich.),"Culture of the Professional Language" (by L.Matsko), etc., educational information about the styles

of the contemporary Ukrainian literary language, classification of business papers, business cards were offered, but in the practical block a set of tasks for students to develop language, speech and communication skills and skills important for their future professional language competence were insufficient.

Speech competence is the result of experience of communication between people because it is formed in conditions of direct interaction. The experience of professional speech communication is acquired in the process of not only direct, but also indirect interaction between participants in the educational process, when a higher education student gets information about the nature of language and communicative situations, peculiarities of interpersonal interaction and the means of their solutions. In the process of speech professional competenceformation, the bachelor of social work mastered the means of analyzing language and communicative situations in verbal and visual forms. Components of professional speech ofa social work specialist are: professional knowledge; high general culture of a specialist, and formed professional competence. The main functions of professional speech competence are:

- ✓ cognitive function (reflection) of professional speech competence is closely related to the role of speech in implementation of higher mental functions of a person, especially through thinking;
- ✓ informative function (message) of professional language competence is related to the transfer and assignment of information (knowledge acquisition, mastery of skills and abilities) in the educational process and creation of favorable environment for success of the pedagogical process;
- ✓ communicative function of professional linguistic competence is transfer of information, exchange of opinions;
- ✓ stimulating (motivational) function of professional language competence refers to value-oriented attitude to the profession and manifests itself in speech behavior.

All these functions in the real educational process are interconnected and can derive from each other.

Specific principles of teaching Ukrainian professional languageplays an important role in the process of preparing bachelors of social work. They enable building a high-quality and effective system of traditional and innovative methods, techniques, tools and forms of organization of training and self-study for students of the Ukrainian business language for professional purposes.

Specific principles of learning the Ukrainian language are:

- ✓ principle of studying the Ukrainian language as a dynamic system;
- ✓ principle of teaching the Ukrainian language on the basis of knowledge about psychological regularities of language functioning in the communicative space;
- ✓ principle of connection between all linguistic disciplines;
- ✓ principle of purposeful systematic replenishment of active Ukrainian vocabulary of future specialists in social work with the terms of modern linguistic branches;
- ✓ principle of active communicative, professional orientation of Ukrainian language learning;
- ✓ principle of stylistically marked study of language phenomena;
- ✓ principle of differentiated teaching of the Ukrainian language;

- ✓ principle of dialoguization of Ukrainian language training.

Structural components of dialogical educational activity are motivational, communicative, organizational, gnostic, creative, emotional, evaluative ones.

Formation of professional language competence of specialists in social work is an educational process. Its ultimate goal is to master the system of principles, methods and techniques aimed at effective communicative interaction with colleagues and patients.

Thus, having analyzed the modern theory of language and practice of speech training of students majoring in humanitarian specialities, in particular in social work, one can conclude that the issues of professional language competence have not yet been sufficiently developed.There is an urgent need to find new didactic and practical solutions in the field of professional language training for future specialists, improvement of all its components.

We define the essence of professional language competence of a social work specialist as his/her ability to use language norms efficiently and effectively in order to achieve goals and objectives determined in accordance with specific professional speaking situations.

Professional training of a bachelor students majoring in Social Work should combine specialized language theory, which is based on modern achievements of science and technology, with the practice of future professional activities. The problem of substantiation of pedagogical conditions for the formation of professional language competence of future social work specialists and the creation of a model for its formation requires further complex research.

2. Pedagogical conditions for formation of professional language competence of future bachelors majoring inSocial Work

In order to achieve educational goals, Ukrainian higher education institutions are actively searching for new ways and means of modernization, intensification and comprehensive enhancement of professional training in higher education, improving its quality through widespread use of the latest advances in science and technology, introduction of modern pedagogical, informational and communicative technologies, advanced pedagogical experience of leading domestic and foreign universities.

We are deeply convinced that today the focus of all participants in the educational process should be on:

- ✓ achieving of the European level of higher education by every educational institution;
- ✓ formation of professional competencies as readiness and ability of future specialists for professional activity and further professional and personal development;
- ✓ formation of patriotism, social orientation of a person and conscious attitude to professional activity.

Modern scientific research on professional training of higher education graduates shows that students' acquisition of a high level of linguistic competence is an important factor for the growth of further professional self-improvement and increase of speech competence among general public.

Formation of students' professional language competence is not always fully realized as it is defined by the educational professional program of specializedtraining. The reason is that in the process of educational activity of the higher education institution the relevant organizational and pedagogical conditions are often lacking, namely, necessary and sufficient managerial, personnel, organizational, educational, methodological, informational and logistical support of this process. These inconsistencies greatly affect quality of the training of graduates of a new modern formation. Due to this problem, creation of appropriate pedagogical conditions for the organization of the educational process is now very relevant and significant.

Analysis of literary sources, study of theoretical and practical aspects of professional training of social work specialists, suggests that their professional competences, including speech competence, are initially formed during the educational process in the context of an appropriate educational environment. These professional competences continue to improve, develop furtherand acquire the highest level of their quality in conditions of long-term direct execution by specialists of their functional duties at the positions which are envisaged by educational and professional program for preparation of bachelors majoring in social work.

Therefore, for an effective process of forming professional language competence of future social work bachelors, it is advisable to determine pedagogical conditions that would help to solve corresponding pedagogical tasks and achieve educational goals.

Conceptual basis of pedagogical conditions is at the intersection of scientific researches conducted by scientists from different fields: philosophy, pedagogy, psychology, law, sociology, physiology, etc.

Leading determinants of characteristics and interaction of various components of professional speech were defined by scientists N. Bidyuk, O. Griguk, A. Vardanyan, I. Zimnya, Y. Kolominsky, A. Mudrik, O. Leontiev, L. Necheporenko, V. Semichenko, S. Sysoevoye, L. Sushentsevoi, N. Tarasevich and others. The researchers emphasize on the objective need and necessity of forming this important component of students' professional activity at higher education institutions.

The concept of "pedagogical conditions" was thouroughly considered in works the works of I. Aksarina,A. Aleksyuk, V. Andreev, Y. Babansky, A. Bagdueva, A. Berezhnova, A. Brazhnich, S. Yerokhin, L. Zagrebelna, A. Zalizniak, B. Kupriyanov, A. Lytvyn, S. Maksimenko, V. Mancho, O. Nazarov, I. Podlasy, N. Tvrezovskaya,M. Filonenko and others.

Professional language competence of a social work specialist is the ability to use language norms efficiently and effectively to achieve the goals and objectives determined in accordance with specific professional communicative situations.

The content of professional linguistic competence is: knowledge of accuracy, adequacy, correct use of linguistic means, knowledge of linguistic means usage and their specific features depending on the type, style of speech, correct and relevant utilization of figurative and expressive means of language.

The components of professional speech of social work specialist are as follows: professional knowledge; high general culture of a specialist, and formed professional competence.

Scientific analysis of the problem of professional competenceformation of future bachelors of social work involves the definition of key pedagogical conditions that enable effective organization and implementation of the formation process in relation to the indicated competence.

Nowadays, scientific-pedagogical literature encompasses a sufficiently large number of viewpoints on the definition of pedagogical conditions, thus, this term is interpreted differently. So, in particular, in the definition dictionary of the Ukrainian language it is stated that condition is a "necessary circumstance that enables realization, creation of something or contributing to something". Therefore, it is important for us that "a set of specific conditions form the environment of a process or/and phenomenon which effects the laws of nature and society.". The term "condition" reflects universal relation of things to those factors that make it happen and exist. Due to existance of appropriate conditions, the properties of things move from possibility to reality.

Consequently, without appropriate circumstances, a desired phenomenon, process or action can not emerge. We consider the factor to be an objectively existing event, a phenomenon, a fact, a connection that determines change, development or sustainability of the existence of the whole.

Conditions are stable circumstances surrounding the object (process, phenomenon) and determine nature of the influence on it. An important characteristic is the ratio of one component of the conditions to another.

An arbitrary complex object (thing, process, phenomenon, etc.) has an innumerable number of direct and indirect links and relations with other objects (speeches, processes, phenomena). At the same time, there is at least one relatively closed minimal set of objects (processes, phenomena) in which all of them are necessary for the predetermined object (process, phenomenon). Actually, this set is called sufficient conditions, and since each element of this set and its subsets is a prerequisite, a sufficient set of necessary conditions is sufficient.

Consequently, under necessary conditions, there always is a certain action, and the very action is aimed at creating sufficient conditions. If the process is regarded as a factor, conditions are circumstances sufficient and necessary for the realization of the possibilities which are inherent in a particular process (factor).

Conditions usually refer to external and/or internal circumstances, i.e. something on which something depends (according to S. Ozhegovym).

Russian psychologist N. Konyukhov under the notion of "condition" understands the totalityof phenomena in external and internal environment which probably affect development of a specific mental phenomenon. In his opinion, the corresponding socio-psychological and organizational-pedagogical conditions constitute the environment in which any phenomenon or process arises, exists, develops and interacts with other phenomena and processes.

In the process of learning,each student of higher education institution is formed as a person and as a specialist in one or another field of activity according to a defined set of pedagogical conditions.

In modern pedagogical science there are different views and approaches to the definition of the essence and content of “pedagogical conditions”. We will analyze only some of them, which are usually brought forward by scientists.

According to scientists A. Aleksyuk, A. Ayurzanaine, P. Subcaster, pedagogical conditions are defined as “factors influencing the process of achieving the goal”.

The scientist A. Lytvyn notes that pedagogical conditions are a complex of specially designed general factors of influence on the external and internal circumstances of the educational process and personal parameters of all its participants. This ensures integrity of education and upbringing in the educational and informational environment of an educational institution in accordance with the requirements of society and labor market demands, promote comprehensive and harmonious development of an individual and create favorable opportunities for identifying its interests, taking into account needs and formation of human and professional qualities, key qualifications, general and professional competencies.

The scientist Y. Babansky's considerspedagogical conditions as “factors relevant to the pedagogical circumstances that contribute (or counteract) to manifestations of pedagogical patterns due to the effect of factors.”.

We agree with the opinion of S. Maksymenko and M. Filonenko who consider pedagogical conditions as “a significant component of the pedagogical processwhich integrates a certain set of pedagogical measures aimed at achieving the goal”.

Another scientist A. Bagdueva, exploring the concept of “pedagogical conditions,” emphasizes that this is nothing more than “the circumstances of the learning and teachingprocesswhich are the result of purposeful selection, design and application of elements of content, methods, and organizational forms of education in order to achieve didactic goals”.

L. Zagrebelna considers pedagogical conditions as “the circumstances which effect and are the basis of a holistic productive pedagogical process of professional training of specialistsmediated by the activity of the individual”.

O. Brazhnich argues that pedagogical conditions can be considered as “a combination of objective possibilities of content, methods, organizational forms and material possibilities of the pedagogical process which ensures successful achievement of the goal”, and O. Nazarov – as “a set of objective possibilities, content, forms, methods, pedagogical techniques and material-spatial environmentaimed at solving research problems”.

According to I. Aksarina, “pedagogical conditions include those conditions which are deliberately created in the educational process and should provide the most effective flow of this process”.

In their turn, researchersN. Parkhomenko, R. Seryozhnikova and L. Yakovytska state that “pedagogical conditions is a set of objective possibilities, content, forms, methods, pedagogical techniques”.

It is important that conditions can be provided, selected, combined. V. Andreev has a similar view since he argues that pedagogical conditions are the result of “purposeful selection, design and application of elements of content, methods (techniques), as well as organizational forms of learning to achieve goals”. So, trying to achieve the result, it is possible with a combination of certain conditions to

influence the course of the educational process or phenomenon and improve their effectiveness.

As we disclose the meaning of the term "pedagogical conditions", it is logical to state that it is a matter of circumstances related to the managerial aspects of planning, organization and conduct of educational process in a higher education institution, with the external and internal educational environment in which there is educational, research and educational activity of higher education students. This activity is aimed primarily at students' acquisition of professional knowledge, skills and abilities, development of high personal qualities, formation of professional competences, including speech competence, etc.

Researchers classify pedagogical conditions and divide them into external and internal ones.

External conditions include a variety of features of the environment: comprehensive provision of educational activities of the institution of higher education; social environment; the interaction of participants in the educational process; impact of a teacher and training information he provides, objective nature of the assessment of the results and effectiveness of a training; tuition fee or scholarship; social pressure, etc.

External conditions should not be contradictory to the internal, but constructed taking into account needs and interests of students, their individual and group characteristics. Group features are determined by quantitative and qualitative composition, group cohesion, socio-psychological climate, etc.

Internal conditionas are individual characteristics of students, namely: age, sex, character, temperament, psychic cognitive processes; availability and level of professional motivation, orientation, experience; state of health etc.

The external conditions should help to create necessary internal conditions forlearning, formation of readiness of students for self-education, self-improvement, personal and professional development, etc.

Consequently, summarizing the views and approaches of modern researchers to the essence of pedagogical conditions, we can state that under the pedagogical conditions of professional speech competence formation of future bachelors majoring in social work we understand specially created, necessary and sufficient actions, interactions, circumstances, possibilities and factors of the subjects and objects of the educational process which are realized within this process.Their totality determines effectiveness and efficiency (quality) of profesional competence formation of future social work specialistsat higher education institutions.

We believe that this definition can be taken as a basis because it has a generalized integrated character, indicates functional purpose of the conditions and reflects their scientific and pedagogical nature.

Thus, in the future, we can determine a number of pedagogical conditions that will effectively influence formation and development of all components of the training of future specialists in social work, including formation of professional speech competence:

- ✓ availability of highly skilled scientific and pedagogical workers – professional speechspecialists;

- ✓ taking into account peculiarities of professional activity of social work specialists;
- ✓ direction of a teacher and a student towards acquisition of national values and modern pedagogical technologies;
- ✓ implementation of a competent approach to the preparation of a modern student by higher education teachers;
- ✓ gualified selection by a teacher of vocational vocabulary, language materials taking into account the frequency of their use in the field of social work;
- ✓ gradual formation and development of professional competence of the bachelors majoring in social work;
- ✓ transformation of educational material contents and its design in the form of tasks which are interdisciplinary and professionally oriented;
- ✓ organization of individually oriented training for students on the basis of humanization of interaction between subjects of the educational process and development of their moral qualities;
- ✓ use of a set of interactive learning technologies that stimulate speech and communicative activity of future employees in the educational process;
- ✓ creation of informational educational environment in the higher education institution that allows to effectively form professional speech competence on the basis of modern technologies (pedagogical, informationaland communicative) and teaching aids;
- ✓ students' awareness of professional speech importance in their future professional activities;
- ✓ development of thinking, linguistic sense, using expressive means of the Ukrainian language, colloquial and professional vocabulary, shades of meanings of words;
- ✓ formation of expressive speech skills by students.This is achieved by skilful intonation, depending on the content, conditions of communication, and also by the appropriate use of figurative means and means of figurative verbal visualization.
- ✓ formation of students' need for self-education and self-improvement;
- ✓ providing motivation to master professional culture of professional activity;
- ✓ improvement of teaching and methodological support for the process of forming professional speech competence of future social work specialists;
- ✓ constant monitoring of the process of speech competenceformation;
- ✓ control over both the development of the speech culture and the students' communication culture, creation of a setting for mastering the literary language in different communication situations;
- ✓ control and development of communicative skills, understanding techniques of communication, investigating their social position in communication;
- ✓ bringing all components of the process of professional speech competence formation into a single purposeful system of education, education and development of future bachelors majoring in social work;
- ✓ dissemination or extrapolation of professional speech in the sphere of social work and personal life of a higher education student.

All of above-mentioned pedagogical conditions are aimed at forming one or another component of the future social work specialistsprofessional training. Each condition taken individually has certain advantages and opportunities, but only their combination will allow to achieve necessary didactic and educational goals, to get the best results in professional speech competence formation of the bachelor students majoring in social work.

Abstract

In this monograph section, the nature of concepts “professional language competence of social work specialists” and “pedagogical conditions” is revealed. It is determined that professional competence of a social work specialist is his/her ability to use language norms efficiently and effectively in order to achieve the goals and objectives determined according to specific professional communicative situations. Pedagogical conditions for professional speech competence formation of future social work specialists are presented as specially created necessary and sufficient actions, interactions, circumstances, possibilities and factors of subjects and objects of educational process which are realized within this process and totality of which determines efficiency and effectiveness (quality) of the process for forming the professional competence of future social work specialists in higher education institutions. Analysis of literary sources was carried out and the key pedagogical conditions for the formation of professional speech competence of higher education studentsmajoring inSocial Work were determined.

Key words: social work specialist, linguistic education, linguistic competence, speech competence, pedagogical conditions, formation of professional speech competence.

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Formation of professional and pedagogical competence of teachers in leading countries of Europe

Introduction

Achieving an adequate level of professional and pedagogical competence of Ukrainian teachers of HEA in modern conditions requires the need to use foreign experience in the field of pedagogical activity. This requires in-depth and comprehensive analysis and dissemination of good practice and new educational strategies in the global community.

The study of this experience opens new opportunities for improvement of the process of professional and pedagogical competence of teachers of the HSE of Ukraine. In this context, the progressive achievements of countries demonstrating high levels of teachers' professional and pedagogical competence, in accordance with world standards that have rich historical traditions of education, have gained considerable scientific interest, and have accumulated considerable experience in the field of teacher retraining in new socio-cultural conditions.

We have analyzed the process of educational training and professional development of teachers and argued that it depended on the characteristics of socio-economic and political life, historical traditions, national mentality, pedagogical traditions of each of the developed countries.

Currently, education systems across countries are experiencing trends in the standardization of the educational process related to globalization processes, and at the same time there is an increasing need to improve the level of teacher training for HSE. Therefore, the issues of developing their professional and pedagogical competence are of particular relevance.

Thus, only in the presence of a high level of professional and pedagogical competence did the future teacher of the institution of higher education be able to obtain the title which provided him the right to hold classes in the HSE.

Our analysis of this experience will undoubtedly help to increase the required level of professional and pedagogical competence of higher education teachers of Ukraine.

1. Professional and pedagogical competence of teachers in the countries of the European Union, namely Poland, France and Germany

It should be noted that in the Western European countries, the main requirement for the level of development of this competence was focused on the qualities of the teacher, such as the ability to independently find ways to solve complex tasks, independently to acquire new knowledge, skills, skills, to have a positive self-image; ability to communicate harmoniously with students, ability to comfortably work in a team. Experts from the European Union countries have defined the teacher's pedagogical competence primarily as an "ability to apply knowledge and skills"[1] that ensures the active use of learning achievements in new situations.

Most of the European countries today have a thorough discussion on how to equip the ZVO teacher with the necessary skills and knowledge to ensure that his or her professional and pedagogical competence is adequate and appropriate. That is why they believe that in this process it is important to understand the concept of this competence in pedagogical science and practice. It was necessary to determine how it needed to be developed so that it could become a necessary criterion for working in the ZVO. For this purpose, it was important to take into account, first of all, the pedagogical abilities of the teacher of ZVO, his individual-psychological features, the level of application of the acquired pedagogical experience, etc[2].

Foreign scientists such as J. Winterton, F. Delamar-LeDeist, E. Stringfellow, J. Raven, L. Holm, and D. McClelland have examined the role of teachers in higher education and the level of professional and pedagogical competence required.

E. Corvette rightly points out that among the basic competences of teachers, professional and pedagogical competence is the most important because it is directly related to the performance of their professional duties.

To this end, in 2005 the European Parliament was made public recommendations for the definition of the main competences, including vocational palagogna that will allow a person to recognize and use opportunities for self-development, determining goals and strategies for quality education and, respectively, and ways of learning[3]. This competence is determined by sformovat skills of the teacher to plan, organize activities, manage its progress, to analyze and predict the results of their professional activity, to assess the risks and own resources. The level of development of the specified competencies should occur in the ability of the teacher to relate one's own creative abilities with the possibility of its detection at a certain professional level.

It should be noted that the basis of European approaches to professional and pedagogical competence of teachers of the WMD was based on the so-called

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[1] Key Competencies. A developing concept in general compulsory education. Eurydice. The information network on education in Europe, 2002. – 28 p.

[2]Chickering Arthur W., Gamson Zelda F. Seven principles for good practice in undergraduate education. American Association of Higher Education Bulletin. – 1987. – vol. 39. – №7. – P. 3-7.

[3]Recommendation of the European parlament and of the Council on key competences for lifelong learning // communities of the European communities. Brussels, 10.11.2005. – [Електронний ресурс]. – Режим доступу: www.jows. pl/sites/default/files/KE_European%20Indicator.

Dublin model universal description of competencies (Dublin descriptors): knowledge and understanding; applying knowledge and understanding; formulation of the judgements; communication; desire and ability to improve their skills.

Thus, in accordance with the European system of qualifications of modern teacher should:

- to use specialized knowledge for critical analysis, evaluation and synthesis of new and complex ideas at the very cutting edge of the corresponding area to expand or rethink existing knowledge and professional practice within a specific area or at the junction regions;
- to be able to explore, develop, implement and adapt projects that lead to produce new knowledge and new solutions;
- demonstrate substantial leadership, innovation and autonomy in work and training activities in new contexts that require solving problems that arise from many interconnected factors;
- demonstrate the ability to maintain sustained interest in the development of new ideas or processes and a high level understanding of learning processes;
- authoritative to communicate within a critical dialogue with equal status experts;
- to study and reflect on social norms and relationships and to be a leader in their changing;
- critically analyze, evaluate, synthesize new and complex ideas and strategic decision making based on these processes;
- demonstrate experience operating interaction with the ability of making strategic decisions in a complex environment.

The main question that was rosv Azubalis in this direction − what are the main elements in the activities of teachers needs to be performed to meet the specified educational requirement to work in call and demonstrate professional and pedagogical competence adequately.

Noteworthy that criteria for the development of professionally-pedagogical competence of the teacher is needed to work in the secondary cooling zone was determined by the following components: motivational value, which is manifested through a set of motives and needs, which motivate the teacher to develop the necessary professional and pedagogical competence; cognitive, which is characterized by a system of acquired knowledge, which should have the teacher ZVO; practical, which is supported by the implementation generated relevant professional skills.

Modern requirements for the pedagogical staff of ZVO in France require a more concentrated approach to the development of their professional and pedagogical competence, this is primarily the ability to use discussions in the educational process, the implementation of activities and exercises of communicative and dialogical nature and experimental exercises, the ability to analyze and solve unplanned situations. To do this, the teacher should make extensive use of "problematic methods", methods of demonstrating pedagogical videos, modeling, micro-teaching, role-playing games, project presentations, etc[4].

[4] Lashchykhina V.P. Rozvytok systemy pidhotovky pedahohichnykh kadriv u Frantsiyi (druha polovyna KHKH – pochatok KHKHI stolittya) : dys. kand. ped. nauk: 13.00.01 / Lashchykhina Vitalina Petrivna; Kyyivs′kyy nats. linhvistychnyy un-t, Minosvity i nauky Ukrayiny. – K., 2009. – 274 s.

The system of improving the professional and pedagogical competence of working teachers of HSE in Germany includes advanced training courses at higher education institutions, seminars, conferences[5]. There are a system of requirements for conducting them: classes should be short-term; they should be held near the place of residence and work of teachers; they should address problems that are particularly relevant to the university where the teacher works; the content of the classes should be tailored to the wishes of the trainees themselves and help them to solve specific problems and difficulties that occur in their practical activities.

Each of the above forms of work has its own peculiarities and advantages. For example, councils in German universities, as a form of professional development and pedagogical competence, are held when there is a need to familiarize teachers with state documents in the field of education, directives on changes in curricula, discuss new learning technologies Visits to the staff of the teaching staff when there is a need to evaluate innovations in the field of teaching methodology or to provide specific assistance in a problem or conflict situation the teacher.

In the process of developing the professional and pedagogical competence of university professors in Germany, the universally recognized requirements for the level of their education are adherence to the trend of interdisciplinarity and maximum harmonization of normative and variational courses. This is evidenced by the practice of organizing work to improve their qualifications, in particular at the Hamburg, Heidelberg, Goettingen, Osnabruck and Ruhr Universities. In each of these higher education institutions, depending on local conditions, scientific and social factors, determine the level of necessary educational training of these teachers, argue the feasibility of introducing normative and variational courses for their retraining, integrated programs, promising teaching methods in postgraduate studies. For this purpose the following innovative teaching methods are used: role / business games, project method, trainings, "mental maps", case method, brainstorming, situation modeling, presentations and more. All of them have a positive impact on raising the level of professional and pedagogical competence of teachers for work in the ZVO.

The analysis of the specialized literature shows that the development of professional and pedagogical competence of university professors in Germany is due to the creation in the respective higher educational institutions of appropriate organizational and pedagogical conditions that allow to effectively achieve this goal, taking into account the specifics and peculiarities of their professional activity.

The system of professional retraining of university teachers based on the formation of their professional and pedagogical competence in such European countries as Poland, Lithuania, Hungary was carried out on the basis of postgraduate technologies with multidisciplinary networks of additional training, functioning and on the basis of specially designated educational institutions, as well as refresher training directly on-site with online access through well-defined curricula. According to Polish scientists, the principles of continuity, unity and differentiation, replacement of narrow-profile broad-based training, comprehensive development in a wide range of education, flexibility, scientific and economic education are the main ones in the

[5] Die besten Hochschulen in Deutschland // Stern. 2001. – Heft 17. – S. 57-68.

process of developing the professional-pedagogical competence of university professors.

The Strategy for the Development of Education of Poland for 2007-2013 laid down the basic principles and tendencies of forming the professional and pedagogical competence of teachers of higher education institutions, which was grounded in particular with the development of a flexible educational system capable of adapting to changes related to the progress in science, new technologies and globalization, as well as the positive changes in the international educational process that have been associated with the implementation of a transparent system of professional qualifications; creating a unified system for recognition of teachers' professional qualifications[6].

Thus, the professional and pedagogical competence of the teacher of ZVO determined the goals in the process of his retraining from the whole course of disciplines necessary for the ability to build the educational process vividly, emotionally, interestingly; select the content and appropriate equipment for training; teaching material is accessible, clearly, clearly, convincingly; to develop the necessary didactic material for training with students.

The analysis of the leading European experience in the development of professional and pedagogical competence of teachers in the field of higher education showed that:

- ✓ a clear orientation of the state policy of the leading European countries on the development of the necessary potential of the teachers of the HEA;
- ✓ legal and regulatory framework to support and integrate their professional development;
- ✓ sound guidelines and results of the programs of their professional retraining for work in the HEA.

2. Formation and development of professional and pedagogical competence of teachers in England and Denmark

In England, in particular, attention was focused not on personal characteristics but on the characteristics of the teacher's activities. The main question addressed in this direction is what are the main elements in the activities of teachers to be fulfilled in order to meet the educational requirements to work in the HSE and to demonstrate professional and pedagogical competence in a proper way.

As teaching staff is governed by professional standards, the National Framework of Professional Standards for Higher Education Teachers has been approved in England by the Academy of Higher Education, which includes three dimensions of qualitative formation of its professional and pedagogical competence: basic knowledge, professional values with appropriate descriptors. The following descriptors were attributed to professional values: respect for each student; promoting it in higher education; use of actual data of research results on teaching and

[6] Pal′chuk M. Model′ profesiynoyi osvity i navchannya u Polshchi – chetvertyy etap yevropeys′koyi intehratsiyi / M. Pal′chuk // Porivnyal′na profesiyna pedahohika. 2011.– №2.– S.101-111.

continuous professional development of the teacher; understanding of the context of higher education, application of professional practice.

Recently, in order to increase the level of professional and pedagogical competence of the teacher of HEA, there is a process of active implementation of the online learning model, which involves the widespread use of local and global computer networks in the structure of the British Open University. Online online contact enables the teacher to quickly send questions and get the necessary advice.

There are three types of courses to enhance the professional and pedagogical competence of teachers based on the active use of information and communication technologies (ICT): Web-intensive – the online learning process is fully online; Web-focused – it is intended to use ITC as a compulsory element of the required advanced training program; Web-enhanced – providing free access to electronic services, according to which does not necessarily require the teacher to be online.

This scheme has developed in other English universities in the course of long historical development and today remains one of the most popular forms of advanced training of teachers and their professional and pedagogical competence.

At the present stage of development of professional pedagogical competence of teachers call in Denmark among scientists increased active search for new models of its formation. They were directed to develop requirements, which would promote the efficient solution of this fundamental problem by deepening the connection of theory and practice in the process of professional activity of a teacher in high school. The main requirements to their academic work and development of this competence has been determined, the deepening of professional thinking of the teacher with emphasis on its pedagogical reflection, self-awareness, a harmonious combination of critical and creative understanding of the principles of effective activity of the ZVO, which allow him to understand any teaching situation and instantly find the right solution[7].

Conclusions

Thus, on the basis of the theoretical analysis of foreign experience of the development of professional and pedagogical competence of teachers for their work in the higher education system, we can distinguish the main aspects of the implementation of this problem:

- obligatory connection of standards of pedagogical training of these specialists with the standards, which are defined in the normative legal norms of carrying out the educational process in ZVO;
- in the selection of the required subjects that are required be connected with their pedagogical activities, taking into account the necessary issues of pedagogy and didactics.

The professional and pedagogical competence of a teacher should be understood as having not so much amount of knowledge and experience as the ability to actualize the accumulated knowledge and skills at the right moment to use them in the course of the exercise of their professional functions in higher education.

[7] Rolyak A.O. Pidhotovka navchatelya v Daniyi / A.O. Rolyak. – Kam poshyrenets′ -Podil′s′kyy: FOP Sysyn O.V. – 2010. – 48 s.

Studying foreign experience is, in our opinion, important, but there is a need for theoretical substantiation and experimental verification of a promising model for the development of professional and pedagogical competence of teachers of higher education institutions in the European Union.

Abstract

Achieving an adequate level of professional and pedagogical competence of Ukrainian teachers of HEA in modern conditions requires the need to use foreign experience in the field of pedagogical activity. This requires in-depth and comprehensive analysis and dissemination of good practice and new educational strategies in the global community.

The study of this experience opens new opportunities for improvement of the process of professional and pedagogical competence of teachers of the HSE of Ukraine. In this context, the progressive achievements of countries demonstrating a high level of teacher-pedagogical competence of teachers in accordance with world standards, which have rich historical traditions of education, have accumulated considerable experience in the field of teacher training and retraining in new sociocultural conditions.

It should be noted that in the Western European countries, the main requirement for the level of development of this competence was focused on the qualities of the teacher, such as the ability to independently find ways to solve complex tasks, independently to acquire new knowledge, skills, skills, to have a positive self-image; ability to communicate harmoniously with students, ability to comfortably work in a team. Experts from the European Union countries have defined the teacher's pedagogical competence primarily as an "ability to apply knowledge and skills" that ensures the active use of learning achievements in new situations.

Today, most European countries are conducting a thorough debate on how to equip the ZVO teacher with the necessary skills and knowledge to ensure that his or her professional and pedagogical competence is adequate and appropriate. That is why they believe that in this process it is important to understand the concept of this competence in pedagogical science and practice. It was necessary to determine how it needed to be developed so that it could become a necessary criterion for working in the ZVO. For this purpose it was important to take into account, first of all, the pedagogical abilities of the teacher of ZVO, his individual-psychological features, the level of application of the acquired pedagogical experience, etc.

Keywords: education, higher education institution, countries of the European Union, Ukraine.

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To the problem of adaptation Gifted children of junior high school to study

Beginning of schooling is a stressful situation in the life of a child, because it involves the need to adapt to new microsocial conditions. This process is accompanied by various shifts in the functional state and to a large extent affects the psycho-emotional area of health. The success of the child's ability to socialize, the effectiveness of his or her learning and further social activity depends to a great extent on the welfare of the adaptation period during the admission to school. That is why the issue of junior students having to adapt to the new school environment does not loose its relevance and are constantly in the center of scientific research.

The problem of adapting a child to school was and remains the subject of close attention of many teachers, psychologists, and doctors. In particular, the results of scientific research on the nature of adaptability / disadaptation, the factors of their determination, and the specifics of manifestation contribute to the clarification of certain aspects of it, as is illustrated in the writings of such authors as G. Gandzilevskaya, I. Dubrovina, I. Zagurskaya, V. Kagan, O. Kulchytska, A. Leskova-Savitskaya, O. Marinushkina, R. Ovcharova, N. Samokina, A. Furman; The issue of the relationship between the child's psychological preparation and the school's adaptation to education was studied by L. Božovich, L. Wenger, N. Gutkina, V. Davydov, O. Proskura; Emotional development of children of preschool and junior school age was studied by O. Kononko, O. Kulchytska, V. Mukhina, P. Yakobson; various aspects of the problem of adaptation of gifted children to schooling were reflected in Sh. Amonashvili, O. Antonova, D. Bogoyavlenskaya, O. Kulchytska, O. Matyushkina, O. Savenkova, V. Shadrikova, N. Shumakova and others in scientific investigations.

While pointing out the significant contribution of the named scientists to the development of the problem, it should be noted that their creative work is focused on the individual theoretical aspects of the problem. However, at the practical level the issues of the adaptation of gifted children of junior school age to study in modern pedagogical science, remains unresolved

The purpose of the paper is to provide a theoretical substantiation of the process of adaptation to gifted children of elementary school age and to highlight these particular problems and prospects for its improvement.

1. The concept and essence of giftedness

Giftedness as a scientific psychological-pedagogical problem attracts attention in fact in recent decades of our time, although the term "adaptation" arose in the second

half of the eighteenth century. Its introduction into scientific circulation is associated with the German physiologist Aubert, who used this term to describe the phenomena of adapting the sensitivity of the organs of sight or hearing, which is expressed in increasing or decreasing sensitivity in response to the action of an adequate stimulus [1].

In scientific sources, the definition of "giftedness" is interpreted as the systemic quality of the mind that develops throughout life and determines the possibility of human achievement of higher results in one or several types of activity compared with other people. Signs of giftedness are advancing intellectual and psychological development, expressed physical data of the individual.

A gifted child is characterized by bright, obvious, sometimes outstanding achievements, or has preconditions for this in one or another kind of activity. Necessary and relevant in our day is the development of giftedness, as a result of the complex interaction of heredity, natural instincts and social environment, mediated activity of the child. Improving the individual abilities and talent of children, creating conditions for their self-realization is one of the priorities of the New Ukrainian School, which should ensure the scientific content of the educational content in accordance with the opportunities, inclinations, interests and needs of the gifted student, the introduction of new pedagogical technologies aimed at activating cognitive, the creative potential of gifted children, the formation and support of positive motives of students, their involvement in active activities. Nowadays, there is no doubt that the realization of the above-mentioned problem is only possible if child's adaption period at school is non-traumatic.

The scientific concept "adaptation" (translated from the Latin adapto – adaptation) is one of the keys in the study of a living organism, since the mechanisms of adaptation developed as a result of long evolution, it provides the possibility of an organism's existence in a changing environment. Given the purpose of this article, it is important to focus on the peculiarities of the adaptation process for junior pupils, since joining a school is a turning point in every child's life, due to the need to adapt to the conditions and requirements of the new environment. Obtaining a new status of a student, provides both, new rights and responsibilities of the child, which is included in the new forms of activity, is mastering new types of relationships with peers and adults. It is precisely in the elementary school that the foundations of the formation of basic educational establishments are laid, which in the future determine the child's success in school education, the possibilities of its personal self-realization in the school environment, and in the whole system of relations of the child with the surrounding world and on his own [2]. And, therefore, in order for the child to "not to get lost" in the new conditions of life, it is essential that this process proceeds as successfully as possible, in order not to lose his potential of giftedness. In doing so, special attention should be paid to the following aspects of adaptation of the child to

[1] Lukashevych M. P. (1998). Sotsializatsiya, vykhovni mekhanizmy ta tekhnolohiyi [Socialization, educational mechanisms and technologies]. K.: – 85 p.

[2] Kryvchykova O. (2008). Psykhomotorniy stan yak faktor adaptatsiyi uchniv pochatkovykh klasiv do umov navchannya v shkoli. [Psychomotor condition as a factor of adaptation of elementary school students to school conditions]. Fizychne vykhovannya, sport y kul′tura zdorov'ya u suchasnosty suspil′stvi, 2, 162-164.

school education, such as physiological, psychological and social, which are largely interdependent and correlated with each other. Thus, in particular, physiological adaptation is associated with the peculiarities of the physiological reactions of the organism, which underlie its adaptation to the new conditions of life. The level of its formation will depend on the level of efficiency of the first-graders, as well as his ability to cope with mental and physical activity in school. Taking into account the physiological aspects of adaptation makes it possible to manage the learning process, promotes teacher's understanding of the possibility of avoiding excessive intensification of educational work, requires such a construction of a pedagogical process in order not to endanger the health of the child.

The psychological aspects of the first-graders' adaptation are associated with the adoption to the new position in life and the transition to a new educational type of activit, accompanied by such changes in the emotional sphere of the child as the growth of internal tension and level of anxiety, impulsive manifestations of interaction with adults, etc. The process of interaction between yesterday's preschooler and his new school environment is to seek and use adequate means and means to meet such basic needs as physiological (food, sleep, rest, etc.), the need for security, acceptance and love, recognition and respect, self-expression and self-affirmation. The phenomenon of psychological adaptation involves the teacher's consideration of its components, such as the mental, motivational and emotional and volitional readiness of the child to study at school. As the level of students' development determines the success of not only academic achievement, but also the whole process of its socialization. Thus, in particular, the mental readiness of children to school is not limited to mastering a certain amount of knowledge about the environment, but includes thoughtful actions and operations; motivational readiness is characterized by the presence of a child's desire to learn, and emotionally-volitional determines the ability of a junior students to regulate their behavior in rather difficult situations associated with tensions, feelings. In the context of the above, we note that the prominent psychologist, a recognized specialist in the field of child psychology D. El'konin especially emphasized the importance of the child's psychological readiness to study at school and well-meaning forms and methods of careful preparation for this new and crucial phase in his or her life. This should fully comply age features of the child, emphasizing that arbitrary behavior emerges in the role-playing collective game of children, which enables them to rise to a higher level of development [3].

The degree of formation of the physiological and psychological adaptation of the child to school education will in a certain way determine the specificity of the process of its social adaptation, which is considered by scientists as an integrative indicator of the child's condition, reflecting its ability to adequately perceive the surrounding reality, determines its attitude towards people, their actions, nature communication and learning, as well as the ability to work, relax and regulate behavior in accordance with the expectations of others. Under these conditions, the problem of social

[3] Ovcharova R. V. (2001). Tekhnologii prakticheskogo psikhologa [Technologies of a practicing psychologists]. M.: – pp. 304–314.

adaptation of younger schoolchildren and the preservation of their mental health is very important in our society [4].

The process of adapting to school life and its conditions is complicated. Some children pass it easily without mental injuries, manifestations of deviations in behavior and difficulties in learning, while others have difficulties, resulting in the problem of maladaptation, which is interpreted by scientists and practitioners as the formation of inadequate mechanisms for adapting a child to new environmental conditions, which is usually accompanied by violations of norms of behavior, difficulty in learning, increased level of anxiety, violation of personal development.[5].

2. The role of the New Ukrainian School in the prevention of child maladaptation

School disadaptation is characterized by a loss of academic motivation, accompanied by a decrease in interest in learning up to reluctance to attend school, poor performance, conflicts in communication with teachers and peers, predisposition to deviant behavior, low or overestimating self-esteem, and the dominance of negative emotional stress.

Unfortunately, the realities of today show an increase in the number of primary school students who are in a state of maladaptation, which scientists, teachers and parents associate not only with the problem of child health or the success of its education, but also with the socio-psychological occurrence of a child in school life, in the team of the class, in the system "teacher-student", "student-student". It is far from the exception that the category of disadapted younger pupils is replenished by gifted students.

Successful adaptation to school life, in the opinion of the prominent American psychologist Alice Paul Torrens, who is among the scientists deservedly called "the father of modern theory of creativity," depends on the level of formation of the basic preconditions for educational activity [6], the special readiness of a child to school – the level of her ability to read, write and count. In this regard, we consider it worthwhile to point out that the program and methods of training that existed for a long time in the system of native primary education were calculated for a child who did not receive special training for the school [7], as a result of which gifted children often find themselves in a situation of dissatisfaction with their own needs, slowing down the development of their existing assets while the teacher worked in the general, did not

[4]Gutkina N. I. (2000). Psikhologicheskaya gotovnost' k shkole [Psychological readiness for school]. M.: Akademicheskiy Proyekt. − 184 p.

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[6] Torrens Y. P. Test kreativnosti. Diagnostika tvorcheskogo myshleniya [The test of creativity. Diagnosis of creative thinking]. Retrieved from: http://psycabi.net/testy/577-test-kreativnosti-torrensa-diagnostika-tvorcheskogo-myshleniya.

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predict the "trajectory" of each child's development, taking into account her natural instincts and abilities.

Implementation into the educational practice of the conceptual foundations of the New Ukrainian School, where child-centered and personally oriented approaches are key to the organization of the educational process in the school, where mandatory pre-school education is a priority – it is our belief that in today's conditions not the only and not so one of the factors that will contribute to the successful prevention of child maladaptation to school, and above all an indicator of creating a special enabling environment for the development of all of its creative abilities and capabilities.

Thus, in order to establish successful adaptation of junior pupils to study, in work with first-graders, it is necessary to take into account the following:

- the formation of psychological readiness for the school, which involves the combination of playing, productive, educational and other activities, that should be carried out taking into account the age and individual psychological characteristics of the child, which manifests themselves at the level of learning, in the pace of learning knowledge, the child's attitude to intellectual activity, peculiarities his or her emotional area and volitional regulation of her own behavior;
- to achieve effective teaching of junior pupils, a positive emotional attitude towards the knowledge and new responsibilities is necessary;
- the management of the activities of first-grade students should be carried out, using widely (especially in the I semester) methods of preschool education with the partial gradual application of school methods, which will link non-traumatic transition from kindergarten to school, "softer" adaptation to school education;
- in pedagogical work with first-graders it is important to maintain continuity not only in methods of work, but also in the styles of pedagogical communication;
- to adhere to the sequence (not contradictory) in the application of school methods of work and in the formation of a team of children of the first classes and the organization of their interpersonal communication;
- purposefully to form skills of role and interpersonal communication of children as an important condition for preparation for change of the lead activity;
- to make maximum use of educational opportunities for joint activities of junior pupils [8].

The conducted analysis of the essence of adaptation of junior schoolchildren showed that this problem is interdisciplinary and requires a comprehensive solution, envisages the establishment of close cooperation between educators of pre-school educational institutions, primary school teachers, specialists in social-psychological service of the school (practical psychologists and social educators) and, of course, the parents'. Each of these subjects of interaction with the child, having its own specific

[8] Andriychuk S. V. (2014). Nastupnist′ u profilaktytsi sotsial′noyi dezadaptatsiyi starshykh doshkil′nykiv i molodshykh shkolyariv [Continuity in professional societal disadaptation of older preschooler students and younger school age students]: avtoref. dys. na zdobuttya nauk. stupenya kand. ped. nauk: spets. 13.00.05 «Sotsial′na pedahohika». Kyiv, p. 26.

influence on it which should create conditions for successful adaptation of the child to its new social status of being a student. They should help preventing the manifestations of school maladaptation, which may arise at the initial stage of education and to relate with the impact of both external, social factors and individual psychological, which will ultimately help to timely identify the causes that can provoke the emergence of school maladaptation, as well as effective organizations to overcome it. Given the special attention which is provided in the process of psychological and pedagogical support for the adaptation of first-graders to study in specially organized educational work with parents of schoolchildren, which should be deprived of any formalism, must be carried out systematically. This requirement is based on a completely objective reason, since the formation of the younger generation in Ukraine is taking place against the backdrop of weakening the educational role of the family institution, increasing the number of dysfunctional families and a large-scale labor migration. These are causing the emergence of a new social phenomenon such as distant families of migrant workers, contributed to the re-accentuation of values of parents and children, the formation of deformations in the process of socialization of children. Among the important causes of school maladaptation, the researchers described in the article the problem is called unfavorable family socialization of children, caused by the mistakes of parents in education (ignoring the adult individual peculiarities of the child, permissiveness, the absence of restrictions and norms, the dominant hyperprotection, accompanied by full control of the child's actions as well as the restriction of the child's environment family circle, negative assessments of creative efforts of the child, etc.) [9]. And, consequently, understanding the process of school maladaptation requires knowledge of the social situation of development and life of the junior students, taking into account the factors that act as factors of provocation, additional deepening or deterrence of the school maladaptation process.

Conclusion

Each child is unique, endowed by nature with unique abilities, talents and opportunities. The mission of the New Ukrainian School is to help uncover and develop these abilities and talents. One of the first steps in this responsible way should be to create favorable conditions for effective adaptation of the child to school, a timely detection and elimination of causes that provoke the formation of school maladaptation, which will successfully reveal the potential of each individual.

Further research needs a problem of the influence of the type of pedagogical interaction on the success of adaptation of children of elementary school age to studying.

Abstract

The article analyzes the concepts of «adaptation» and «disadaptation»; Various views of scholars on the problem of the interpretation of these concepts are

[9] Lazarenko K. P. (2016). Diahnostyka shkil′noyi adaptatsiyi uchniv pershoho klasu spetsializovanoho navchal′noho zakladu [Diagnostics of school adaptation of first grade students of a specialized educational institution]. Medychnyy forum: naukovo-periodychne vydannya. – L′viv: L′vivs′ka medychna spil′nota, 8, 77-79.

considered; Areas of adaptation are outlined and characterized; suggested additional methods to overcome difficulties of adaptation of junior schoolchildren.

Key words: gifted children, learning process, school age, adaptation, disadaptation, problems, stress situation.

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Educational integrology: methodology, theory and applications

Introduction

Scientific understanding of integrational processes that are developed actively in society of the second half of the twentieth century – the beginning of the second-first century, could influence the education. It caused fast growing of researches number on the given topic as on general scientific level, as well as in educative aspect: integration in enhancing teaching and learning (B. Bandhana, 2012), curriculum integration (J. Beane, 1998), integrated education (M. Fan, 2004), obstacles to the integration in education (W. Pelgrum, 2001), effects of technology on education integration (C. Rhonda, 2002; S. Rodney, 2002), teaching and learning of integrated science (A. Jacinta, 2011), predictors of technology integration in education (K. Rogers, J. Wallace, 2011), theoretical basis of didactic integration (S. Goncharenko, 1997), methodological provision of pedagogical integration (N. Chapaev, 1998) etc. However, many problems related to the development of an integral theory of integration in education still require a separate study. The theory of integration exists today in a broad, not strict sense as a set of opinions, concepts, ideas directed only for the interpretation or use of integration in education. To construct a theory of knowledge integration in the strict sense it is necessary to overcome a number of objective and subjective difficulties that inhibit the implementation of scientific research results of integrative processes into the educational establishments practice. To these difficulties we refer disordered cumbersome terminological apparatus of integration, lack of approaches coordination to understanding of the integrative processes in education, the scientific research into difference between the different aspects of the problem; the availability of a great number of the isolated principles, regulations, laws related to the integration; acquiring multiple levels, scale, kinds, types etc. for the concept of "integration"; identification of integration with close concepts (synthesis, complexity, systematization, interdisciplinarity) and substitution of integrative processes for eclectic ones etc.

In our opinion, the study of integrative processes in education is appropriate to develop in the direction of *formation of laws and regularities* that can be as certain cases of general educative laws. As the development on the problems of integration in education is different, we introduce the concept of **integrology**, a branch of scientific knowledge of the essence, reguliarities and application of the integration.

We would like to note that this term in the educational context has been used for the first time by the (I. Kozlovska, 1999) when talking about the pedagogical field. As you know, this time in a more general ontological sense first appeared in the works V. Umnikova (V. Umnykov, 2006). The object of our attention is the integrative processes within education, thus we narrow the proposed concept: **educational integrology** researches the integrative processes within the theory of education.

We are convinced that the problem of integration in education should be solved not only on the empirical level but *to be based on profound theoretical-methodological and philosophical basis*. Many years of the authors experience, are shown in their publications in this area: *Theoretical and methodological foundations of knowledge integration* (I. Kozlovska, 1999), *laws and regularities of didactics in the context of didactical integrology* (I. Kozlovska, 2008), *methods of experimental study of integrative processes* (I. Kozlovska, Yu. Kozlowsky, 2006), *methodology and technology of research activities* (Yu. Kozlovsky, 2010), *General pedagogical aspect of research activities* (Yu. Kozlovsky, 2011), *modeling research activities of higher educational institutions* (Yu. Kozlovsky, 2012) and also numerous theoretical and practical hypothetical regulations grounded in this article are also confirmed by results of other authors who relied on our development integration of teaching methods (O. Bilyk, 2009), method of integrated micromodules (N. Boshko, 2010), *structuring the content of integrative foreign language textbook* (I. Klyuchkovska, 2006), *integrated content of technical disciplines* (M. Kostiuchenko, 2008), *integrating natural sciences and mathematics training* (E. Levchuk, 2008), *integrating content of humanitarian and natural sciences in Pedagogy* (I. Pastyrska, 2011).

In this paper we attempt to define the base of the theoretical laws of educational integration, based on the previous integration experience in the education. Also we discuss the posibilitie of their applyed usage in the educational institutions.

1. Integration: genesis, essence and role in modern education

1.1. Historical preconditions

Since ancient times the philosophers had thought of universal and multifaceted relationships among all things that happen in the world. Their works contain many attempts to cover and reveal universal relationship in nature. The ancient Indian "Upanishady" and magicians studies of the Ancient East contain thoughts of the close ties among all things that happen in the world and these relations are considered to be universal and multifaceted. Often those conclusions are not lying on the surface, but are often burried deeply beneth. These trends are clearly ***manifested in the modern education*** as striving to form in students an integral picture of the world in all its diversity, to combine the knowledge of nature and technology with the spiritual world of the creative person.

In our opinion, *the optimal combination of homogeneous and heterogeneous knowledge* in the content of teaching material encourages not only the formation of high-quality expertise but also development of the students' intelligence. *Revealing of the relationships in the content of training*, their emphasis and development are now one of the necessary conditions for intensification of educational systems. The attempt is important to explain the whole variety of the world by not enough primary

sources. The idea of universal connection and unity in nature was often shown in searching all existing primary sources. Peculiar for modern education is the search for *fundamental knowledge and values* that can establish appropriate educational systems basing on a few laws which all the others are subordinated to. In the content forming of modern education it is necessary to consider that *knowledge has different purposes*. The scientifically based *correlation of theoretical and practical knowledge* must be directed to the creative personality formation.

In the Renaissance and New times needs and development of the technology facilitated the establishment of science basing on philosophy of antischolastic character. Inspite of the dominance of analytical approach in science the integrative trends were considered. They were found in the search for common features, phenomena and things, in attempts to unite them into types, classes of the numerous classifications creating. The specific direction of cognition appeared, it was an attempt to explain the whole world on the basis of one theory or science. Firstly phenomenon of real world were explained by laws of mechanics, later by laws of Mathematics (considering its integrative role to express metric properties of the phenomena and processing of empirical observations results). At that time the humanitarian type of education appeared and developed. The philosophy had an integrative role to combine knowledge of different subjects for a long time. However, a significant number of modern philosophical systems which contradict each other, did not give opportunities to establish constant criteria and to choose one from philosophical systems as a basic one to unite all knowledge acquired by mankind. It is confirmed by numerous examples of philosophical systems analysis. The tendency to create integrative sciences or even one integrative science was peculiar. That's why scientific researches ought to be *directed to revealing and developing of universal laws of nature, the formation of fundamental knowledge and human values system*. Modern educational systems consist of a large number of *relatively autonomous subsystems* the functioning of which can be coordinated on the basis of an integrative approach to learning and education.

The attempts of various sciences classifications confirmed the striving of philosophers to understand the unity, interrelations and mutual influence of different spheres of knowledge: science as a whole had to interpret the direction of human activity and every science separately had to make its contribution. The intensive searches of basic (existing or artificially created) sciences were conducted to integrate well-known knowledge. Various bases for such integration (concept of single laws of movement by Sh.F.Furye, creating of a single integrative science basing upon the ideas of universal gravitation by K.A.Sen-Simon etc.) are offered. However, these attempts were not successful because they only described regularities and essence of different forms of matter movement in terms or limits of some particular form of movement or a specific basic science. One of the reasons for such failures was lack of rational approach to the integration itself.

Basing upon the ancient ideals of so-called pandeya (universal knowledge), the German romanticist suggested plan of the Encyclopedia of Organic unity of sciences. In a series of cases science studies was interpreted as the science of sciences and was identified with philosophy as substance of all sciences. The program of unified

science as an absolute totality, as universum sometimes led to magic and mysticism. However, the very idea to create a unified science was extremely vivacious.

Synergetic approach that at modern stage starts to be used effectively in education, implies *the existence of potential structures and complex integrated systems* that are necessary to identify and implement. It is a kind of counterbalance to those numerous approaches that are directed to different artificial educational constructions or educational systems building without proper analysis of the profound existing opportunities. The topical problem of modern education was closely connected with these questions: *the formation of interdisciplinary, integrated and synthetic courses*. Practically they are not different, although they have significant differences arising from the nature of the notions of interdisciplinarity, synthesis and integration.

Thus, in the development of science till the beginning of the XIX century the trends of integration and differentiation of scientific knowledge were clearly determined. At that time many scientists opposed these processes to each other trying to find the dominant one among them, developed various concepts of science perspectives development. The tendency for the coordination of knowledge constantly increased especially with increasing quantity of scientific inventions. This prompted not only to prove the unity of the world, nature and scientific knowledge but also to seek the effective ways of integration of knowledge accumulated by scientists in different countries and at different times.

The term "Integration" in its modern sense was not practically used in the science studies, especially in education, till the beginning of XIX century. However, the processes that can be called the integrative ones were researched. As *stages that almost all sciences pass are similar on the methodological level, thus their experience using is possible (with some warnings).*

In our opinion, two stages are required for the full development of the modern education: the classical, linear analysis (which will help organize and generalize the vast empirical data) and innovative one that will form it as the whole theory of self-organized systems. Forming of the classical education laws system is the base that can serve the basis for the development of probabilistic ideas, development of synergetic ideas. Modern scientific developments on the problems of the stochastic reguliarities forming are helpful but the criteria for their development has to become of a system of classical laws similar to the laws of Newton in Physics. These classical laws must be as a particular case in more complex, non-linear laws of education but contradict them in no way in limiting cases.

Besides the failed attempts of global integration of sciences, rational and effective process of local integration took place. The attempts to establish relationships between the processes of integration and differentiation, to determine the place of each of these processes in cognition are also important.

Search for the basis and conditions of scientific knowledge unity continues in the XX century. At that time efforts of philosophers were directed to reveal invariant structure of single, unified science. Significant impact on the development of the idea of integration was principle of reduction: an explanation of the complicated, higher phenomenon took place by means of reduction to the simple, lower one. The concept

of integration has become general scientific along with such concepts as structure, system, information, model, management, feedback and others.

Generalizing the mentioned above, we also notice the flourishing of interdisciplinary relations theory Interdisciplinary Connections in School (*I. Zverev, 1996*), Interdisciplinary Connections in the System of Didactical Principles (N. Loshkareva, 1973), the emergence of a large number of integrated courses. In the 80-s years of the twentieth century the systematic researches of integration in the educational context began. This gave the beginning of scientific researches of educational integration the effects of an integrated (T. Turpin, 2004), Technology integration in secondary education (A. Gibbone, 2010), Assessing Engineering Student Problem Solving and Skill Integration Processes (P. Tuba, 2010), pedagogical integration (V. Bezrukova, 1990), integration of labor studies (V. Sidorenko, 1995), integrative modular pedagogical system of professional education (A. Belyaeva 1997). In recent years a number of authors are interested in the possibilities of the methods of biology, chemistry and other sciences in the education industry.

We would like to note that the numbers of parasitic, false integrative researches are parallelly developed where the term integration without adequate scientific and educational study or just as a kind of slogan is used. For ethical reasons we do not give examples of such works but their availability and their number increase leads to a devaluation and leveling of the integration concept of its scientific and edukative context.

It can be concluded that the integration of knowledge as an expression of profound tendency to their unity, in various forms since ancient times the development of scientific thoughts was accompanied. Correct implementation of integration in education is impossible without reliance on historical experience of philosophy and science studies that allows to avoid false methodological principles, to identify positive and negative experience of knowledge integration, to develop conclusions proven over time.

1.2. Definitions and characteristics of integration

Now there are dozens of definitions of the term "integration", the ideas of integration actually penetrated into all areas of education. In 1993 at the session of UNESCO the interpretation of knowledge integration as an organic relationship, interpenetration which is determined by its result, i.e. the forming of a single integrative world picture was made. *The definition of "integration" in its educative context*, with strictly fixed sense and meaning is a necessary condition for the development of the theoretical basis of integration.

The concept of "integration" is a category of general scientific sense: the same functions it can perform also in educative systems. We did not want to create a strict definition of the concept. Below we give *an expanded definition of integration*: ***integration*** *is the process* (two-way process, systematic and structural) interpenetration, consolidation, unification of knowledge; integrity incipience; establishing connections between relatively independent earlier things, processes, phenomena when these relationships are essential defining phenomena functioning which are integrated; *combining* elements that is accompanied by complicated and

strengthened connections among them, the interpenetration of the whole system elements, transformation of some forms in others; *the historical stage* of knowledge movement to the unity; *a specific form* of educational content unity; *interpenetration* of information from one training course in the other one.

Basing on the mentioned above, we offer our interpretation of a narrower concept: ***integrative integration*** is the interaction of elements (with given properties) accompanied by the establishment, complexity and strengthening of significant connections among these elements on the basis of sufficient cause as a result of which the integrated object (the whole system) with qualitative new properties is formed, the individual properties of the output elements are stored in the structure of it.

Various characteristics of integration are highlighted in a number of scientific and methodological developments (block10). We mention only some of them that are important in the educative aspect.

Today we have a variety of studies concerning **integration levels** selection. Generalizing them and basing on our own developments on this problem, we note that the selection of integration levels corresponds to division operation of the concept in formal logic and requires a clear choosing of characteristic according to which the division is made. In our opinion, the following features are advisable to select: *the number of elements* that are integrated; the *degree of relationship* between the elements of integration, nature of integration elements. Basing on such selection of features, there are three options for the allocation of integration levels:

Classification of the integration levels according to the number of integrated elements: first level is microintegration (for a small number of elements), the second level is mezointegration (with optimal number of elements), the third level is macrointegration – with a significant number of items that require additional clustering). During the integration we distinguish especially the integration level: if there is a small number of items, there is a micro integration with weak symptoms of the integration result. Similarly, at the level macrointegration the number of items is too large and the newly integrative system can "collapse". Those extreme cases are sometimes useful but for short educative purposes. Stable integrative system is formed only according to optimal number of elements on the level of mesointegration: this number should be large enough to provide a new quality due to the integration and at the same time not too large to prevent the destructive processes inside the integrated object. Such approach is based on the synergetic ideas mentioned, in particular, in the works of H. Haken [H. Haken, 1993]. We consider such a visual analogy is useful: properties of chemical elements depend on the number of protons in the atomic nuclei but with the very large number of protons these nuclei become unstable as in the transuranic elements. However, each of the elements is necessary if *to use its properties correctly*. We would like to note that this division is *natural*, not artificial, as the number of items is one of the essential features in determining the integration levels.

Classification of the integration levels according to the degree of interconnection between elements: the first level is the *interdisciplinary connections* (minimal, apparent interrelations), the second level is *systematic integration* (optimal essential interrelations that cause forming of integrative systems, in particular

integrative courses), the third level is *metaintegration* (grouping items in subsystems with strong relations and those subsystems into metasystem with the optimal relations leading to the appearance of *metasubjects*). Here we give another analogy: the power of interrelations between the particles of matter determines *the state* of matter. Due to practical lack of interaction between particles, we have gaseous state: analog of interdisciplinary connections because on their level integration elements can exist quite independently and interact only for the tiny fraction of the time. Interdisciplinary connections, relatively speaking, do not have their own "volume" or their own "shape" and interactions can only be used occasionally. Here we have *most degrees of freedom, the greatest mobility but, at the same time, and the smallest ammount of the interaction.*

Systematic integration is similar to the matter being in the liquid state, when it's shape is not saved yet but volume is stable. In this case certain reguliarities appear in integration using, *the degrees of freedom reduced but the results of integration using increase*. Variation of integrative courses, integrative learning systems or integrative teaching problems is entirely on this integration level that is often optimal for educational systems. On the level of metaintegration weak relations between large blocks of knowledge and at the same time strong relations inside these blocks there is a solid body according to the distant order in the arrangement of particles. The shape and volume in each block are defined as in model of solid state allowing *to use the advantages of previous levels at the same time*: to place the integrated blocks inside the metasubjects freely (as for interdisciplinary relations) and at the same time to provide sufficient power of the interaction inwside the blocks in order to systematize knowledge.

This division into levels is natural too because the degree of interaction between elements influences on the integration result significantly. Besides, we have important analogs as of metasubjects as well as systematic objects in the "grand" science. For example, a number of sciences, particularly physics or biology can be interpreted as metasubject, metascience that consists of a number of disciplines: physics and mechanics, thermodynamics, optics etc. and biology with botany, zoology, cytology etc. Pelations between subjects (blocks) are not very strong but inside those disciplines systematic knowledge integration dominates. Such sciences can be called metascientific disciplines. We note that not all sciences are the following: for example, historical sciences are built according to other principles. Among metascientific disciplines (and, accordingly, educational metasubjects) can be distinguished two main types: natural and artificial ones. To the natural ones that were formed according to the basic idea of metascience relate physics, mathematics or biology. The artificial metasciences appear to meet specific needs at certain stage of development and are developed in so-called hybrid sciences.

Classification of the integration levels according to the nature of elements: the first level is *corpuscular* integration (the elements have clear boundaries or values and interact as particles), the second level is *the integration of the wave* (the elements do not have clear boundaries and interact according to the principle of waves). We would like to note that the principle of systematic quantization is fundamental in the theory of "compression" of educational information basing on which such theories

are developed as the theory of generalized semantic generalization, theory of consolidation of educative units, the concept of knowledge engineering etc.

1.3. Concepts related to integration

Integration is connected with a number of other scientific concepts the identification of which leads to unnecessary complications. These concepts are the following: *interaction, interrelation, integrity, system, unity, synthesis, subordination, generalization* and so on. Integration is not limited to any of these concepts but most of them describe the integration from one or several sides.

Integration including a ***synthesis*** is the highest expression of it but it is *not limited* to it: it is deeper than the concept of synthesis according to the contents. In contrast to the synthesis the integration includes various structures and organizational processes.

Differentiation creates preconditions for the integration, it is a form of integration expression and, in turn, the integration provides a basis for profound differentiation. These processes do not simply exist in parallel or alternate in the development of sciences or society but are closely related and transformed to each other.

We would like to note that many possibilities in the integration processes have ***fractal, matrix and harmonic*** approaches. However, these issues are beyond the scope of this article and others are highlighted in the other works (Yu. Kozlovsky, 2009).

1.4. Methodological integration reflection in education

Predictive function of integration is *passing from its status as instrumental means to general scientific methodology* that is able to solve a number of controversial issues in specific educative problems.

In our opinion, the most essential is that integration (as a means of passing from certain elements of totality into a new quality) based on the *revival* of natural, objectively existing relations between the elements. Development as a process of new properties emergence that differ from the previous ones significantly is one of the most important features of integration. Laws, dynamic and statistical laws, the probability of events and processes that occur in a variety of systems according to integrative interdisciplinary approach are considered among disciplines. A number of phenomena that are considered as an opportunity in one area of knowledge are real in the other one. During the integration of external and internal status may vary giving a complete picture of the phenomenon or subject that is being studied. The essence and phenomenon in the integrative approach are revealed mostly complete and eliminate the danger of the essence substituting. Therefore, we emphasize that the integrative approach performs its methodological function only under condition of its using.

2. Theoretical basis of educational integrology

2.1. Integrology as scientific branch

Forming of own educative integrology problems was important in the early 90's when the necessity and expediency of an integrative approach in education became obvious. Discrete elements of integrative processes on different levels at this time are researched and require the transition to the final stage: recognizing the internal

interrelations of the earlier isolated parts and elements of the whole, cognition of the structure and functions of complicated systems in complex and unity, the transition to reproduction of the whole.

We offer to combine them into a holistic system, so we introduce the concept of "integrology". **Integrology** is a branch of scientific knowledge of the essence, reguliarities and integration application.

The object of our attention is the integrative processes within education, thus we narrow the concept: **educative integrology** researches the integrative processes within the theory of education. To the external its reguliarities we refer dialectical unity of integration and differentiation with the advantage of integrative tendency, growth of opportunities for integration in education, dynamics of integrative factors and uneven integrative processes, stepwise nature of the integration process and so on. Internal reguliarities reflect the educational, epistemological, psychological and social aspects of educative integrology. *The subject of educative integrology* is defined as the theory of educative integration in all its forms and aspects that allows using not only a variety of reguliarities and means but also the logical connections between them. *Methodological function of integrology* is provided by approach to explaining the facts studied from the epistemological position that also determines the position of the author and his conceptual system and the choice of research methods and ways of using them.

2.2. Laws of integrology

At the present stage integrative trends in education begin being realized as laws. We consider the study of integrative processes should be developped in the direction of forming a system of axioms, postulates and laws.

We do not aim to create any new laws of education. The laws formulated below are attempts to identify a significant number of well-known reguliarities some of the most common that are not derived from one another. The system of these laws makes it possible to deduce other laws as their consequences. However, an available system makes it possible to deduce new, unknown reguliaritis of integration as the interaction of existing reguliarities and laws are the source of new knowledge.

Laws of educative integrology logically related to one another make up *the system*: the first law establishes axiomatic properties (attributes) of the integration, the second postulates the notion of "integration" and its essential features and the third covers dialectically opposite process (differentiation) that provides possibility of integrative processes development.

1. Law of correlation*: elements of integration should have properties that ensure their ability to coordinated interaction (correlativity).*

This law is axiomatic, it is a result of the generalization of a large number of empirical facts, the laws of formal and philisophical logics. The property of correlation of elements, i.e. their interconditionality, is a necessary condition for their integration. Formally, this law can be proved by contradiction: if elements of integration do not have correlative properties, there can be no question of their combination into any systems, moreover, the more integrative ones.

2. Law of imperativeness: *the process is integrative if the following conditions are met:* the emergence of *new properties* as a result of integration; the availability of *systematic and structural nature* of the integrated object; *individual features saving* of integration elements; the existence of *several stable states* of the integrated object.

The law has character of a postulate as it establishes necessary and sufficient conditions for integration and can partly function as the definition of integration. The most important we consider the fact that listed conditions of various combinations (not all at the same time) are conditions of existence of the objects, complexes, different entities and structures. For example, emergence of new properties is characterized for synthesis but, in fact, plays no role in the formation of complexes. The availability of systemic-structural nature of the integrated object is essential in the formation of complexes and synthetic objects but almost does not play a role in other types of interaction (e.g. interdisciplinary connections). Particularly important condition is the preservation of individual properties of the integrated elements as this condition is not satisfied either in the synthesis, or the formation of complexes and systems. In case of interdisciplinary interactionsl properties of elements, as a rule, are kept but it does not guarantee newly-created object in synthetic and systemic aspects.

Thus, the integration is the only process of elements interaction where consistency of the final result is ensured and the properties of individual elements of integration are kept. The very combination of integration features provides the possibility of existing of several stable states of the integrated object which is especially important in education.

3. Law of complement: *integrative processes cause differentiation processes (and vice versa).*

As this statement is a direct consequence of the laws of philosophy, it can be considered an axiom but it is very important because taking into consideration of differentiation provides optimization of educational processes on the basis of opposites unity.

From the laws mentioned above a number of ***consequences*** are as a result including:

1. Elements of integration must be sufficiently homogeneous to maintain the ability to interaction.
2. Elements of integration must be sufficiently heterogeneous to prevent their synthesis.
3. Elements of integration should have critical (initial) meanings, starting from which their interaction is effective.
4. The result of an integrative process is a system (the integrated system).
5. The functional dependences between the parameters of the integrated system are non-linear.
6. During the forming of an integrative system the element changes qualitatively performing "function of an entrance" into the structure of the system.
7. The critical importance of the integration process growth causes the appearance of an initial process of differentiation.

3. Applied usage of educative integrology laws.

3.1. Integration of scientific and educational activity of University

At present an increasingly important aspect of scientific progress is the integration trends causing the formation of science as a single, holistic organism. The integration of research activities is based on objective implementation of integration processes in science including both general scientific and organizational aspects of the activity. The development of science must be accompanied by integration and growth of order that ensures the formation of *science as an integrated harmonic system*. Integration processes extend all the characteristics of science – scientific activity, scientific knowledge, the social function of science. The interaction of sciences along with their differentiation and integration acts as a reguliarity of scientific knowledge development and is realized in the form of individual sciences, the impact of one science on another, the interaction of sciences basing on technical means of cognition. In conditions of the university unity of teaching and scientific activities of education is considered in the context of the principle of complement.

Integration of components in the multidimensional scientific space of the university where all the structural components are appropriately located and most of them are exposed to formalize and quantify the representation is important to build mathematical models of scientific and educational activities in their organic unity. In particular, binary integration of mesosystems of research activities of university lecturers (vocational and industrial, vocational and educational and general scientific), subsystems of learning activities (training courses, research topics, teaching and scientific activity) suggests their association in the integrated metasystem of scientific and educational activities of the university. General scientific component can serve as a link between the vocational and industrial, vocational and educational and general scientific components because it contains invariant scientific apparatus required both in industry and in educative research. We would like to note that the organic combination of all three components in the scientific activity of the university on the basis of general scientific component can form a new integrative branch of science – ***the theory of educative scientific activity*** at the junction of educative theory and general science studies.

Law of correlation provides consideration of scientific activity as a matrix of fractal structures with the same set of elements and different substructures with further their integration. Moreover, fractal similarity of the structures mentioned provides opportunities for effective integration of elements on similar algorithms. Under these conditions the synchronization of teaching and scientific processes in the university strengthens, their coordinated interaction to ensure the self-sufficiency of each subsystem under conditions of self-similarity increases.

The law of imperativeness use is appropriate in the search for new approaches to the construction of quantitative and qualitative parameters system characterizing the results of scientific activity of the employee in the sphere of education, the structural subdivision and the university as a whole. Scientific reasonable integration of qualitative and quantitative indicators of scientific activity and teaching activity is the first step towards the integration of these subsystems and elaboration of integral

quantitative and qualitative indicator of scientific and educational activities of the university on the whole.

Integrology laws and their consequences fully concern personal-professional development of teachers and university students basing on the development of component-based structure of their willingness for scientific activity. Putting into consideration the correlation of willingness / conditions of scientific activity of the teacher that allows to evaluate his/her potential possibilities occupying the defined position has significant potential.

3.2. Integration of knowledge in the process of education

Integration of merely subject knowledge leads to the adding of the knowledge (according to the principle of localization), in this case we simply summarize the information. Actually such approach is not integrative in nature and leads to overload of content of training with secondary and outdated information. Consequently, there is an urgent need to archive and to minimize the unnecessary information. However, the integration of problematic knowledge generates new knowledge (according to the superposition principle): elements of problematic knowledge with each other are enriched and complemented.

The quality of knowledge assimilation depends on the degree of their integrity. The analogy is appropriate with the principle by Pauli. To make an atom a stable and, at the same time, dynamic system, there are certain limitations in its structures. In particular, each energy level can not contain more than N = 2n2 the maximum number of electrons on the level. Similarly, the amount of knowledge that is given at somestage or in a certain system (training course, theme, module, etc.) should also have a maximum amount that can not be exceeded in order to "break" the system. Basing on these and other limitations imposed by nature on its systems, it is advisable to introduce *the principle of purpose of knowledge* that is especially important in professional schools. This principle requires logical and sufficient grounding of specific (comprehensive or vocational) purpose of including each subsystem of knowledge in learning content. This principle can be one of the effective ways of dealing with academic overloading.

Individual properties preservation of the integrated knowledge elements allows to structure knowledge according to subject and problematic principle. Similarly to the types of chemical connection we can develop principles of integrative relationships between knowledge basing on the characteristics of specific knowledge (natural, humanitarian, technical, special, etc.). Ionic connection (according to which the cubic crystal lattices are based) can serve as a scheme in the construction of two-component systems of knowledge where natural and technical knowledge are equally combined. Covalent connection (common electron pair for two atoms) can be a prototype of the formation of integrative courses related to subjects where knowledge is duplicated (e.g. in physics and chemistry). Polar connection (moving electron pair toward one atom) corresponds to the cases when one of the knowledge types in the system is necessary to focus on, for example, professionally oriented course in physics. Other analogs, especially in forming of the content knowledge for vocational education can be found in the coordination or donor-acceptor connection (electron

pair of one atom and the vacant orbital of the other one) and also sigma-connection (cover of electron pairs).

The volume of the integrated knowledge is lower than the range of knowledge elements that are integrated (because of qualitative transformation of elements). The analogy is appropriate with the mass defect in atomic theory. This reguliarity is based on the principle of compression and archiving of information. Such process is possible by eliminating the duplication of knowledge. However, there is a process that can be compared to a defect of mass in physics: consolidating part of the "mass" of knowledge goes into the "energy" of their relationship that is manifested in an implicit form. In the practice of learning it is implemented as follows. Studying certain concepts or theories (e.g. basis of molecular-kinetic theory in courses in physics, chemistry, materials science and some special subjects) students under conditions of merely subjective studying learn a number of concepts and relations between them (in this case there are, at least, four independent systems of knowledge that often differ with interpretations of the same phenomena, the same quntities etc.). If these systems are submitted on the basis of an integrative approach, the newly created system gets rid of many unnecessary terms and relations. In other words, the combination of integrative knowledge by eliminating of duplication and inconsistency in their notations, students acquire the same essential knowledge in all disciplines without intermediate links focusing attention only on the relations of really significant ones. We would like to note that such approach does not deny the peculiar to each science interpretation of the material studied but only provides its coordination and complements.

Depending on the circumstances the knowledge were subjective or integrative in nature (the dualism of knowledge) due to the persistence of individual attributes of elements. The knowledge ability to integration as well as to differentiation proves the availability of invariant part (fundamental knowledge) and their ability to quantization.

3.3. Some other possibilities of using of integration laws

There are other possibilities of educative integration laws and their consequences using. This integration of various models of teaching and scientific activities of the University and methodological and general scientific approaches to teaching and research activities and activities of subdivisions and scientific structures of the university, a variety of methods and forms of learning etc. Special attention should be paid to the study of integration of scientific concepts and artistic images in the learning and scientific activity. Another important direction is the integration of learning courses, creation of metasubjects as well as integration of general educational, general and scientific and vocational components in teaching and scientific activities. These directions refer to the prospects of educative integrology.

Conclusion & discussion

Many of the problems related to the development of a holistic theory of integration in education still need to be studied separately. This defines a new field of study i.e. educative integrology. We believe that a complete theory of educational integration should be established as a scientific theory (regardless of spheres of

study) i.e. to be built basing on a system of laws (or reguliarities, postulates) and their consequences that explain the large number of empirical facts and have predictive possibilities. The positive role of educational integration laws to move from an axiomatic to strict scientific theory of educational integration, to explain the large number of empirical facts and observations basing on the integration of educational integration and their consequences as well as strengthening of predictive components of scientific basis of the educational sphere.

The debatable issues are the ones directly relating to integration in the education. The optimal usage of integration is very important for efficient educational process. Excessive or false integration can create a number of problems by combining processes that are not integrative in the scientific sense.

The formulated laws are an attempt to identify from a significant number of well-known reguliarities a set of the most common ones that are not derived from one another. The system of these laws makes it possible to derive new, unknown reguliarities of integration directed to improving of education and optimization of all processes in educational institutions.

Abstract

The article considers the problem of methodology, theory and practical using of integrative approach in education. The expediency of educative integrology of new scientific branch is grounded. The attention is focused on the offered laws of integration and its using in different parts of educational process: system that contains three basic laws of educational integration and their consequences is theoretically grounded. Specific examples of practical using of the integration laws are considered and their development prospects in educational and research activities of the Universities are defined.

Keywords: integration, integration in education, integrology, educative integrology, laws of integration, integration of scientific and learning activity of the University, integration of knowledge

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