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Premised Knowledge as a Basis of Formation of Profession-Oriented Creativeness of Modern Higher School Students

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Abstract: On the basis of the content analysis of source material-the scientific literature, normative documents, expert opinions, mass media-we have presented the theoretical arguments and generalizations which together make up an array of the premised knowledge, having worldview characteristics and allowing on this basis to create predictive models of the processes aimed at creating the conditions for formation of certain qualities of the person in the process of training. The premised knowledge array considered in this article is represented by three groups of preconditions to have emerged in the psychological and pedagogical sciences (the results of theoretical and experimental studies of general creativeness person in ontogeny are represented in Russian and foreign psychology, pedagogy and biology, the scientific bases of creative pedagogy and creative metapedagogy are developed) in the system of general and vocational education (modern current federal state educational standards of general and vocational education contain requirements, targeting the organization of educational process in schools and universities for development and formation of the creativity of pupils and profession-oriented creativeness of students) and emerging economics (research in the field of staffing of the economy, emerging at the stage of information society and post-industrial economy) and that allow to interpret the phenomenon of profession-oriented creativeness and, if necessary, to construct conditions of formation of this personal quality of the students the future specialists in the educational environment of modern higher school.

Key words: Premised knowledge, profession-oriented creativeness, creative economy, creative pedagogy, modern university

INTRODUCTION

The use of the notion "premised knowledge" (Mikeshina, 2005) in the methodological apparatus of our study is due to the need for revealing and differentiating explicit and implicit premises and methods of their "entering" the knowledge and functioning in cognitive activity.

It is believed that all knowledge (natural-science, humanity, philosophy) is influenced by value premises. Knowledge, in this case, can be divided into special scientific and premised (worldview) for convenience. In particular, Mikeshina (2005) considers premised knowledge to be philosophical, in her opinion, it exists and functions alongside and in cooperation with special scientific knowledge and it reflects socio-political, cultural and historical factors which determine to some extent scientific knowledge. Therefore, such knowledge applies the term "premised knowledge", introduced back in the "critique of pure reason" by Kant who studying a priori basic principles, differentiated analytic and synthetic a priori.

Premises (premise: the starting point of any assertion and the prior condition for something; the verb premise means to write or say as an introduction to something) the study of the problem of development of profession-oriented creativity of the students-future specialists is theoretical and practical experience (and the range of problems) accumulated by professional education, economics, biological, psychological and pedagogical sciences for understanding the phenomenon of creativity and the conditions of forming this personal quality in training the specialists. The search for premised knowledge was necessary to substantiate and develop the efficient technologies of further formation of profession-oriented creativeness (Kharchenko and Aibatyrov, 2015) of the students of modern higher schools.

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First of all, we were interested in the socio-economic aspect of the problem, so we turned to the consideration of the so-called "creative economy", the formation of which takes place in the developed countries, including in Russia (Florida, 2003; Howkins, 2001). Creative economy is understood as an economic system which is characterized by a major role of new technologies and discoveries in various fields of human activity; a large amount of existing knowledge and the urgent need to generate new knowledge, a high degree of uncertainty (Kharchenko and Aibatyrov, 2014; Florida, 2003; Howkins, 2001). The task of economic subjects in this situation is to act in proactive and interactive regime of communication with the external environment of activity.

See a guarantee of continuing professional success of future specialists in this type of economy in the creation of a new intellectual culture that implies a special training of thinking technique, i.e., one of the main conclusions of the scholars consists in that creativeness should be specially trained.

For this reason, the states that are trying to improve their competitive advantages in the global arena embark on the path of development of creative industry. So, Great Britain is one of the first countries where the government has recognized and paid close attention to the priority tasks of creative industries for social and economic development (Kharchenko, 2012; Howkins, 2001) and determined the list of branches (advertising, architecture, crafts, different trends of design, cinema and video, entertainment software, computer games, live and recorded music, performing arts and others), included in the creative economic sector and defined the activities of creative industries: "it is an activity which is based on individual creativity, skill and talent and which has the potential for creating the value added and jobs through producing and exploiting the intellectual property" (Kharchenko, 2012).

Florida (2003) and Hawkins (2001), defines creative economy on the basis of professions. Thus, there are two methodological approaches to the definition and classification: labor and industry. Based on the sectorial approach, Hawkins (2001) has calculated that the share of the USA on the world market in the field of the creative economy is >40%. The labor approach suggested by Florida (2003) is based on the definition of the creative class which consists of two subclasses: supercreative kernnel and creative professionals. He referred to supercreative kernnel the professions in the field of: programming and mathematics; architecture and engineering; natural and social sciences; education, training and library science; arts, design, entertainment, sports and mass media. The subclass of creative professionals are as follows: management professions; professions in the field of business and finance; professions in the field of law; professions in the sphere of health care (doctors and technicians); governing professions related to sales and sales management.

According to Florida (2003)'s estimates, the creative class of the United States is >30% of the working population, exceeding the labor and agrarian classes together. According to the degree of influence of classes, to the level of income of their representatives, the creative class comes to the fore, as the largest part of the incomes settles in this sector, twice exceeding the income, for example, of the service class. Such data are not available for Russia.

MATERIALS AND METHODS

The content of the issues discussed in this article has been obtained by the authors from different sources and processed using the content analysis. The content-analysis was performed in the following logic:

- The study of different sources (scientific and publicistic literature, mass media, normative legal documents, managers' speeches, expert's opinion) containing information about the status of the test question, structurally and substantially invariant content but apparently prevailing as unsystematic, randomly organized textual material
- Quantitative and qualitative analysis of texts and text arrays, the interviews on purpose of further meaningful interpretation of the revealed laws
- Reflection, analysis and self-analysis of the subjective scientific, pedagogical and management experience of the authors in order to reveal the contradictions between the educational practices and their theoretical interpretation
- The ascent from the variety of text and conceptual material to the abstract model of the text of the content (wording of conceptual-categorical apparatus in the form of definitions of creative economy, profession-oriented creativeness, premised knowledge, etc)

RESULTS AND DISCUSSION

The main body: As already mentioned above, premised knowledge, constituting a potential basis for the modeling of the educational environment of the higher school, aimed at the formation of profession-oriented creativeness of students, is represented by several groups of premises. This is sufficient for further creative development and

solution of the applied problems, treatment of the phenomenon of creativeness in science. These are the problems and contradictions in the system of vocational education and expanding economy.

The results of numerous studies in the world have made a huge array of premised knowledge which can be used in practice of training a creative specialist in university. In particular: the principles, grounded in the scholar's writings on creativity as defining the personality characteristics, conditioning the person's ability to be creative (D.B. Bogoyavlenskaya, J. Guilford, V.N. Druzhinin, E. Torrens, M. Wollach, N. Kogan, S. Mednik etc.); the theory of personality-oriented education and organization of creative activity of students (V.I. Andreev, A.N. Leontiev, K.K. Platonov, etc.); the psychological theory of personality development and mental set (L.S. Vygotsky, V.V. Davydov, A.N. Leontiev, S.L. Rubenstein, D.N. Uznadze etc.); the theory of developing education (L.S. Vygotsky, P.Y. Galperin, V.V. Davydov, L.V. Zankov, A.N. Leontiev, D.B. El'konin etc.); the studies in the field of educational technology theories (V.P. Bespal'ko, M.V. Clarin, A.M. Matyushkin, G.K. Selevko, etc).

In addition to the Russian psychological-pedagogical science there have arisen the schools that develop this subject area: the problem-based learning (A.M. Matyushkin, M.I. Makhmutov); the creative pedagogy (G.S. Altshuller, I.M. Vertkin); the education of intellectual creative personality (I.P. Ivanov, V.A. Sukhomlinsky); the creative pedagogy (A.G. Aleinikov).

Creativeness is important for everyone, so it is worth mentioning the foreign studies related to the issues of development of creative personality potential (I. Bergan, Maslow, D. Miller, K. Rogers, D. Skandura etc.). According to these studies, the need for creativity stimulates the prosperity of personality, developing personal intellect, will and abilities. The scholars believe that "the need for being creative performs an integrative function in relation to all social needs" (Soldatova, 1996). The foreign scholars also emphasize that the very knowledge is not a goal but there is a special moment of activity of students which makes it possible to go beyond the cognized (Soldatova, 1996).

Our position is consistent with Druzhinin (1999)'s position, according to whom, creativeness is not so much activity in general as a specific activity in the activity itself which expands the creative potential of the latter. In other words, creativeness consists not only in changing and successive transforming of an object of creative work but (and it is important) the subject of creativity that is a man, so creativeness can and should be taught since childhood.

For the study conducted, it is important that Isaev (2002) considers human creativity through the prism of his professional culture and notes that it is characterized by such features as the willingness to take risks, the independence of judgment, impulsivity, cognitive "meticulousness", critical judgment, originality, the courage of imagination and thought, a sense of humor, a tendency to joke and so on. According to the scholar, these qualities reveal the features not just a creative but truly free, independent and active personality.

Based on the views of domestic and foreign scholars, in the first place, one can single out the main characteristics of the profession-oriented creativeness of the students, at the formation of which the pedagogical activity of the teachers of higher school should be targeted it is a steady focus on creativity, divergent thinking, fantasy, motivational and creative activity embodied in educational subject, education and production and production activities. And, secondly, it is possible to give a scientific treatment of the profession-oriented creativeness, in the researchers presentation, a profession-oriented creativeness reflects the creative achievements of the student's personality at various stages of professional education and activity and is understood as the ability to create new educational and professional products and high performance of the activities through realization of creative abilities. The characteristics of a creative product of educational or professional activity of the student the future specialist are unusualness, novelty, economic usefulness of technical and technological development as well as the overall effectiveness of educational and professional work being expressed in optimal organization of activities with consideration for minimization of costs.

Interesting for our study and revelation of the premises of formation of students' creativity found in the array of premised knowledge is the experience of mathematical modeling of age-related dynamics of change of the creative resource of personality obtained as a result of content analysis (Kharchenko and Aibatyrov, 2015). The model of the age-related change of creativity is a superposition of two basic processes that determine the creative professional performance: the first process is a change of objective human abilities for processing (associative analysis, etc.) accumulated and assimilated information the active thesaurus of a specialist. This process is described in the model as a parameter which is

called "biological creativity". Biological human creativity in ontogeny increases initially at the age of 5-7 and then at the age of 15-30, reaching the maximum to 17-23.

The basis for this assertion is a subjective experience of assessing the dynamics of creative possibilities, both own and the other's, for example, the famous figures of science and culture, being distinguished by their creative abilities (N. Tesla, V. Pauli, P. Kapitsa, L. Landau, A. Akhmatova, L. Gumilev, etc.) in whose activities the periods of relative creative stagnation and lifting are fixed. There are also the results of objective biochemical studies that demonstrate a significant increase in the level of certain substances in the human organism that are directly responsible for effectiveness of information processing in the nervous system such as myelin in nerve cell walls. For this study, the data on the dynamics of biological creativity are of considerable interest, since the age of 17-23 completely coincides with a period of training of the students in higher school. Creating favorable conditions in the classroom that are conducive to the maximum creativity, we will thereby not only form the creative qualities of the student's personality but lay the foundation for further professional development (Kharchenko and Aibatyrov, 2014, 2015).

As the latest investigations by Stouch show, further in ontogeny by the age of 30-40, the creativity is reduced and increased after the age of 40, reaching its maximum by 60-70. To maintain creativity in ontogenesis is possible by accumulating of expert knowledge and continuing professional development which is described by the parameter called the specialist's "active thesaurus". Active thesaurus is understood as aggregate information on specialty and related problems which is constantly realized and present in the mind of a specialist when interpreting and constructing the processes that he is interested in. This fact actualizes the problem of professional orientation (future specialist, particularly) on the continuity of education, permanent self-education.

Appeal to the premised knowledge revealed the problem areas. So, the experience of personnel training in institutes of the country shows that the creative approach to the organization of vocational training is contrary to the traditional organization of vocational training which is based on a continuous and consistent acquisition of general and professional knowledge and is based on the reproductive capabilities without personal-creative potential (Aleinikov, 1989; Kharchenko and Aibatyrov, 2014). Besides, the involvement of youth into modern social and production relations is much more difficult than for many other countries problem as its solution takes place under conditions of social change. We meet with difficulties in improving education because of the uncertainty of economic, cultural and technological development of the country, as well as acute contradictions and slow adaptation of education to the changes.

One ought to stress that the creative efficiency of the specialist is only one of the constituent parts of the spectrum of professional performance. It comes to the fore among other equally valuable skills, when there is a need for a qualitative development of the industry, when you need a step further, not followed the others. Therefore, one of the preconditions for the formation of profession-oriented creativeness of university students are the employers' requirements for modern graduates of higher education institutions. The study found that the search, selection and recruitment of a qualified, knowledgeable, competent specialist is one of the "eternal" problems which is always concerned about by the employers. However, in recent years, in terms of the problems, being actively discussed in both the educational environment and the environment of employers and in the business community, close attention has been paid to the special quality of graduates the creativeness (Kharchenko, 2012; Florida, 2003).

A today's student, the tomorrow's a graduate from university, the day after tomorrow's specialist should be creative. It is required by the standards of education, the employers have same willing. Unfortunately, the domestic specificity of relationship to the creativity (talent, freedom of thought) consists in that on the one hand, its statement is very prestigious and on the other hand of the very creativity is traditionally everyhow suppressed in the domestic industry, educational and research structures.

The content analysis of the history of technology and inventions, the creative life of eminent scientists, inventors shows that they had also a special way or algorithm of thinking along with the high (for its time) level of basic knowledge and special knowledge representing heuristic methods and techniques. The latter were often developed by themselves. For example, such famous scientists like R. Descartes, I. Newton and M. Lomonosov made their contribution to the theory and practice of creativeness. For example, I. Newton introduced the method of principles and M. Lomonosov developed a logographic method for finding solutions of problems (Kharchenko, 2012).

To date, the fund of methods and means of heuristics is huge and more than a thousand designations. It is no

coincidence that many of these methods were initially secret and classified as a powerful intellectual weapon. So, the method of synectics, developed in the USA by Gordon has been published by the company "Synecticcorporation" only after 20 year of its successful use. This made it possible for the authors to develop and introduce the practice of the work of institution "training for students and teachers on the development of profession-oriented Nreativeness", a special course "entertaining mathematics with training of creativeness", substantiate the conditions of polycontext learning of students.

Summary: According to most researchers, creativeness lends itself to formation. Adolescence and early adulthood which is important for our ongoing research, is such scientists emphasize that creativity is a common feature of personality (ability, disposition, feature the authors disagree in the terminology) and has an influence on the creative productivity regardless of the scope of manifestation of personal activity the researchers of creativity the interest in which is growing all the time offer to consider it from four main aspects: creative process, creative product, creative personality and creative environment (scope, structure, social context that forms demand for the product of creativity). It is advisable to use all these approaches in combination

CONCLUSION

Thus, the results of content analysis of the premised knowledge, directly or contextually indicate the existence of a number of problems connected with the preparation of specialists for the modern creative economy and are the basis for modeling of the process of formation of profession-oriented creativeness of the students in the learning process at university.

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