

Noospheric Pedagogy: The Expansion of the Humanitarian Space of Vocational and Pedagogical Education

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ABSTRACT

The relevance of this subject is due to the changed socio-economic conditions in Russia, which has led to the search for educational paradigms that are appropriate for the new socio-economic development of our country. The purpose of this article is to justify the noospheric pedagogy as an independent branch of the science of teaching that reflects both socio-natural and civilizational changes in the modern world. A leading approach to the study of this problem is a systematic analysis of theories and concepts dedicated to noospherogenesis, which allows filling the teaching science and the educational practice with new constructs and meanings of noospheric content and expanding the humanitarian space by means of new areas of the science of teaching. The study has developed a model for the formation of a new teacher type in the noospheric pedagogy paradigm. Materials of this article may be useful for the development of vocational training programs, including the development of the latter for the network use in the humanitarian space of vocational and pedagogical education.

KEYWORDS

Humanitarian educational space, networking of educational institutions, noospheric teaching, the noosphere, vocational and pedagogical education

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Introduction

The relevance of the study subject is due to the socio-economic changes that take place in Russia and to the global processes of human development that are associated with both socio-cultural and socio-natural changes, which are reflected at all the levels and in all the areas of education in Russia, including the vocational and pedagogical education. However, there is a shortage of scientific research aimed at addressing the issues of a qualitative transition to the new condition as a sustainable training system for vocational education

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under the conditions of the market economy. In this regard, it is important to address the noosphere as a methodological basis of the noospheric pedagogy, which is aimed at creating a new teacher type for vocational and pedagogical education. The issue of formation and development of the noosphere and its importance for the development of the civilization was addressed at different times by such prominent scholars as V.I. Vernadsky (1926; 1944), A.D. Ursul (1993; 1994), and N.N. Moiseev (1990). Their work has formed the foundation for the theoretical and the methodological basis of this study. Moreover, the following studies have been of importance: A.I. Subetto (2012), which was dedicated to the formation of the noospherism and the educational society of the future and the need for the development of an anticipatory education system; and Z.I. Kolycheva (2007), S.A. Ivanov (2015), S.A. Vishnyakova (2012), E.M. Dorozhkin, E.V. Zaitseva & B.Y. Tatarskikh (2016) which considered the noospheric education as a humanitarian phenomenon of our time and developed practice-oriented moral and ethical aspects of the noospheric education. Studies in the field of vocational and pedagogical education and professional pedagogy conducted by G.M. Romantsev et al. (2011) have played a prominent role in solving the above issues.

Methodological framework

Research methods

The following methods have been used in the course of the study: theoretical (a system analysis of the noospherogenesis, the content of vocational and pedagogical education, the logical synthesis of the scientific literature, the simulation of education systems, a factor analysis of the teaching experience, and pedagogical phenomena forecasting); diagnostic (a study of group differentiations, sociometric tests, questionnaires, the examination of documents); empirical (observation, comparison, analysis of group interactions); experimental (pedagogical ascertaining experiments, design of pedagogical objectives, design of the skill improvement trajectory, testing of the model of creating a new teacher type for vocational and pedagogical education and professional training in the noospheric pedagogy paradigm), and the methods of graphic representation of the results.

Experimental research basis

The experimental research base was the Russian State Vocational Pedagogical University, Ekaterinburg Engineering College, Sverdlovsk Regional Medical College, Lyceum No. 3 of Ekaterinburg, and the Childrens Urban Ecological Centre of Ekaterinburg.

Stages of research

The issues have been studied in three stages:

Stage 1. A system analysis of scientific publications in the field of noospherology, noospherism, and noospheric education; a problem analysis of the current state of vocational and pedagogical education and professional training in the context of the noospheric education.

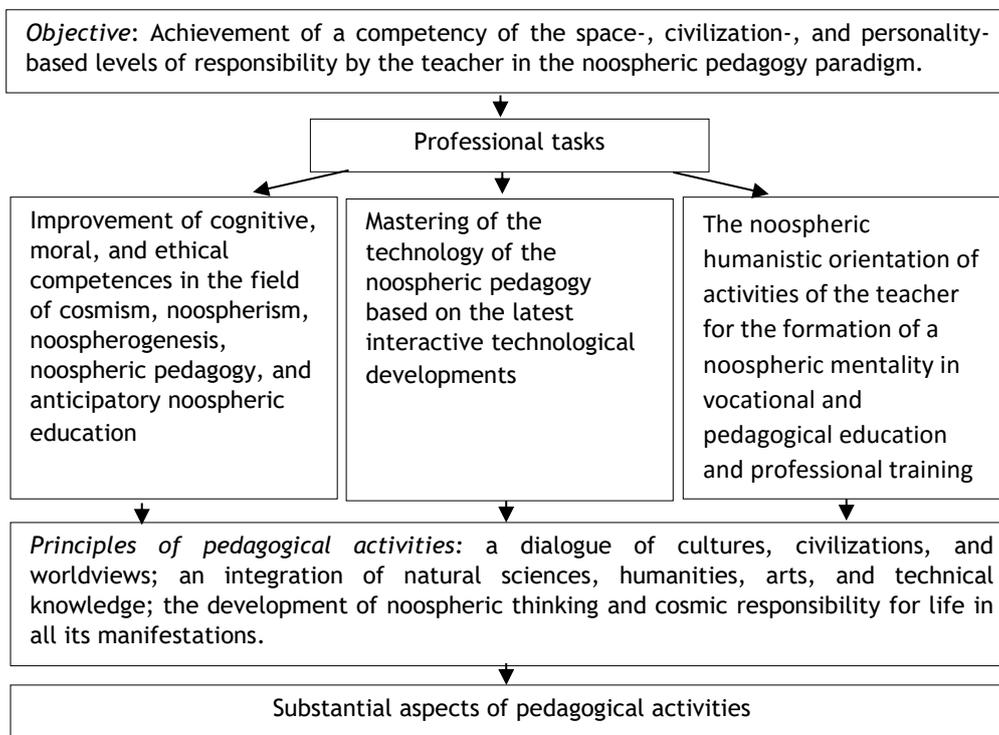
Stage 2. A conceptual search for a theoretical and methodological basis of the noospheric pedagogy; development of a working variant of the theoretical

model of the formation of a new teacher type for vocational and pedagogical education and professional training in the noospheric pedagogy paradigm.

Stage 3. Selection of the issues of professional activity of the teacher, the principles and the content of educational activities for the achievement of noospheric competencies that meet the noospheric pedagogy paradigm; and implementation of an ascertaining pedagogical experiment.

Results and Discussions

Education cannot remain aloof from the social changes that occur in the world and in the society; there is a need for the search for new educational paradigms and new directions of their development. To solve some of the issues of the modern Russian vocational education, we propose developing a noospheric vector of the teaching science that is based on the adaptation of the doctrine of the biosphere and the noosphere, the noospherism, and the noospherogenesis; to this end, we introduce a new concept: the noospheric pedagogy. We have developed a structural and functional model of the formation of a new teacher type in the noospheric pedagogy paradigm, including a comprehensive aspect of pedagogical activities based on the hermeneutic approach and the mechanism of the education that comprises three blocks: space-, civilization- (socio-natural and socio-cultural) and personality-based; moreover, we outline principles and the fundamental aspect of educational activities: the axiological aspect (Figure 1.). The proposed model is the basis for the formation of the individual with the highest cosmic level of responsibility to itself, the society, and the younger generation, which is important in the changing socio-economic conditions of our country and the world as a whole.



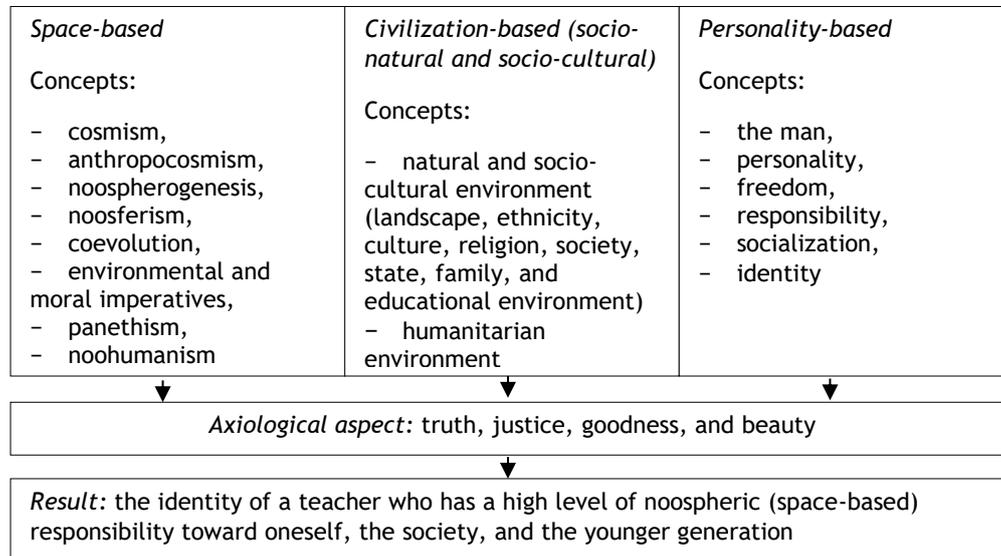


Figure 1. Model of the formation of a new teacher type for vocational and pedagogical education and professional training in the noospheric pedagogy paradigm

At the beginning of the 20th century, the Russian scholar and lexicographer, the founder of the theory of the biosphere and a distinguished humanist V.I. Vernadsky (1926; 1944), who recognized the biosphere as a major factor of the classification of sciences, suggested that the time would come when mankind would have to take responsibility not only for the fate of the society but also for the biosphere as a whole because its development is determined by deliberate human activities. He set apart the realm of reason, “the noosphere”, within the biosphere and repeatedly stressed that the noosphere fundamentally changes the shape and the structure of the biosphere. The scientific thought is a part of the structure - organization - of the biosphere and its manifestation therein. Its creation in the evolutionary process of life is the greatest event in the history of the biosphere and in the history of the planets (Vernadsky, 1944).

V.I. Vernadsky (1926) was among the first to realize that humanity had become a powerful geological, perhaps even cosmic, force that is capable of transforming the nature at a significant scale. He noted that the man had embraced the entire biosphere with its vital functions and culture and was seeking to expand its scope of influence. Noting the deepening of scientific insights into the nature of the occurring processes, V.I. Vernadsky (1944) was convinced that the noospheric humanity would find a way to restore and to preserve the ecological balance of our planet and would develop and implement a strategy for a crisis-free development of nature and the society. He believed the man to be quite capable of taking over the management of the environmental development of the planet as a whole.

In the 20th-21st centuries, many representatives of various scientific disciplines have addressed the problem of the noospheric trying to determine the path of its origin and subsequent development. A special role here is played by the Russian mathematician and ecologist N.N. Moiseev (1990), who has

formulated his own ideas of the noosphere. According to him, the noosphere is an era when the human mind is able to determine the conditions necessary to ensure the co-evolution of nature and the society rather than the state of the biosphere. The collective will of the people will provide a way in the era of the noosphere. He has defined the prerequisites for this as the “environmental imperative”. N.N. Moiseev (1990) believed that the entry of the mankind into the noosphere was essentially possible when the logic of the Man became consistent with the logic of Nature. The Man, in this case, would change, become a new person by changing, first of all, himself (Moiseev, 1990).

Socio-natural dynamics of our time, social, economic, and environmental issues and risks lead to the search for adequate changes in education that contribute not only to mitigating the risks but to anticipating and managing them. In this case, education gradually becomes a function of anticipatory education and will play a more responsible role for all the aspects of the Man’s objective reality, including the Man’s professional activities as the civilization development. Therefore, education needs comprehensive, fundamental changes in both the definition of objectives and the content and learning technologies that form a new human model that is adequate to the noospheric views of the future of the civilization.

According to A.D. Ursul (1993; 1994), who is one of the modern Russian developers of the noospherogenesis theory, creating a new model of the Man requires knowing, at least, some of the features of the future of the civilization.

Unfortunately, the extremely complicated system of the Man is studied in the field of education from the standpoint of different sciences. So far, a scientific integrated area of study of the Man has not been formed at the junction of natural sciences, humanities, technical knowledge, philosophical and futuristic ideas, art, and religion. However, it is already necessary today to take care of the future of the mankind, to form an individual’s epistemic conception of the Man and the Man’s greatest responsibility for their livelihoods, foreseeing positive or destructive results of labour, the effects of the intensive development of technical means of development of the biosphere, and new and unforeseen possibilities of communication systems that change the Man.

This task is difficult, but its implementation is possible if one refers to the noospheric paradigm of human development, a future condition of the society where it will proceed to the intense co-evolutionary way of interacting with nature, where the humanized collective intelligence can ensure the survival of the mankind, the sustainable development of the civilization at the earth and space scale that would be safe in all respects, and realize the human desire for happiness in a complete way (Ursul, 1993; 1994).

We consider the motivation for understanding the noospheric paradigm of the development of the society, its practical use in professional education, including vocational and pedagogical education, even for the present generation, to be as follows: an increase in global socio-natural transformations; anthropogenic changes in the face of our planet; a wasteful consumerist attitude of the Man towards natural resources; a false ethical concept of human interaction with the Nature; a decrease in importance of moral and ethical standards in the society in relation both to the Man and to the foundation of the his life (wildlife, including outer space); an accelerated development of new areas of science (anthropocosmic ecology, noospherology, and noospherism) that

deepen the knowledge of the Man and extend his consciousness; new semantic twists in the post-nonclassical science and philosophy of postmodernism.

One should note that the agenda contains the noospheric paradigm of the development of the earth's civilization in the 21st century increasingly more often. This process naturally follows from the current imperative of the survival of the mankind in this century and from the transition to a single model of the driven socio-natural evolution based on the social intelligence and the educational community. In this context, the education is given an anticipatory role.

A possible embodiment of an integrated educational system that is aimed at developing the Man of the coming civilization that meets the challenges of the noospheric development of the society may be the pedagogical practice of the noospheric pedagogy, by which we mean the area of the teaching science that studies the integrated educational system of the anticipatory noospheric education, which forms the Man with a co-evolutionary worldview who feels and consciously acts like a part of the Cosmos and who is responsible for life in all its manifestations (Sikorskaya & Ippolitova, 2007). Such a pedagogical system expands the humanitarian space and allows creating a noospheric Man with a high level of development of such personality traits as responsibility for the fate of present and future generations, recognition of the universal humanism, which extends to all forms of life on Earth and in the outer space, tolerance of the nature and the Man, mutual assistance in solving creative problems, justice, confidence, ability to predict positive and negative consequences of his professional activities, conscience, etc. One should note, for example, that "conscience" is a subjective consciousness of conformity or non-conformity of one's own behaviour to moral values. The most dangerous result of education may be that well-informed people may turn out not to be burdened by conscience.

When studying the noospheric paradigm of the social development, G.P. Sikorskaya & S.V. Komov (2007) paid attention to the fact that the adoption of the perception of the materiality of thought would become inevitable under the noospheric paradigm because thought is the main processing power, which was emphasized by V.I. Vernadsky (1926; 1944), and all its abilities in this respect should be taken into account. Scattered information about the direct thought impact on bodies, processes, and phenomena must be subjected to a meticulous academic research. The direct channel of the influence of thoughts, apparently, has a great potential of rapid changes in inert and living nature and is therefore especially dangerous. The responsibility for the mental activity is the direct responsibility of each person and requires a high internal culture when dealing with one's own thoughts.

Within the noospheric paradigm, the thought serves as a manager; therefore, the noospheric theory can be regarded as a theory of management of the development of the human society. Since there can be no management without an understanding of the purposes, the theory of the noosphere must form ideas about the ultimate goals of the human society for a certain period, and the choice of targets should be based on certain moral criteria of the noospheric paradigm. The modern society has already made its choice in the form of the concept of sustainable development. According to A.D. Ursul (1993; 1994), the future needs to be managed through the present and to be created in

this sense. The concept of the sustainable development of the civilization, which was formulated on the basis of the analysis of the current global situation, does not contradict the noospheric development paradigm, and their synthesis as a “sustainable development noospheric orientation” may be formed in the future (Ursul, 1993; 1994).

For the purposes of applying the hermeneutic noospheric ideas in the noospheric pedagogy, the conclusions of A.I. Subetto (2012) about the main features of the noospheric development paradigm are also important. He describes them using the following parameters:

1. Total non-classicality of the future objective reality of the Man and the society in the 21st century is manifested in the fact that the very management paradigm of history is a qualitatively different form of the human being, the human mind. The Man’s responsibility for the future, for the preservation of the diversity of life on Earth where human qualities are verified by the quality of management of socio-natural evolution and socio-natural dynamic harmony simultaneously is highlighted.

2. The noospheric paradigm of the social development requires a special social structure of the Man’s objective reality, which can be called a noospheric society; the only form of its implementation is the educational society, where education is the basis of spiritual and material reproduction.

3. An important feature of the total non-classicality of the future objective reality of the Man and, accordingly, the noospheric is the law of anticipatory development of the quality of the Man, the quality of the collective intelligence, and the quality of educational systems in the society (the law of the objective reality of an “adequate man” in a rapidly changing world as formulated by A.I. Subetto (2012).

4. The noospheric scientific nature of the management of the society and its development is the unity of science and the society, science, and education, science and culture, science and the economy and the government, and science and management (Subetto, 2012).

One should recognize that the creation of a social order for a wide range of scientific fundamental and applied research based on the ideas of V.I. Vernadsky (1926; 1944) about the cosmoplanetary destiny of the Man is currently underway. Modern civilization challenges lead to the search for the humanity survival imperative in the 21st century, which allows proceeding to the “managed society and nature (noospheric) evolution” on the basis of the collective intelligence and an educational society. Some futurists believe that only the model of the “Noosphere of the Future” can be viewed as a sustainable development model (Subetto, 2012).

The emergence and the survival of the biosphere and the Man on the planet Earth is a reflection of the outer space evolution living areas. Such conclusions were made by V.P. Kaznacheev & Yu.Yu. Marchenko, (2003) and his students at the International Research Institute of Space Anthropology. Among the many aspects developed in the field of space anthropology, researchers have been tasked with the formulation of new technologies of the development of unique talents and creativity of the individual (Kaznacheev & Marchenko, 2003).

Conclusions about the cosmoplanetary phenomenon of the Man are of fundamental importance in the course of construction of educational systems of

the noospheric orientation and the interpretation of this issue from the standpoint of the noospheric pedagogy.

It should be noted that there is a demand in the studies on the content of education whereof the humanitarian space is filled with noospheric knowledge, concepts, and noosphere-oriented practical activities. For example, V. Spartin (2016) sees that an epistemic approach to the identification of the problem and educational topics should prevail in the selection of the content of the noospheric education. Such epistemes contain collapsed enormous inhomogeneous information about the object. The use of the following as reference epistemes is suggested: water, air, earth, fire, war, disease, body, love, God, faith. These epistemes cover the entire area of issues related to the superepisteme “The Man,” the disclosure of which would be the content of education of the twenty-first century (Spartin, 2016).

Such epistemes can serve as the basis for practical “inflation” with knowledge, concepts, and ideas of common cultural and professional competencies of all the levels of professional education.

Nevertheless, one should recognize that we are only witnessing the beginning of pedagogical research in the field of noospheric pedagogy, the more so because the research in this field is mainly conducted for general education and is practically absent for the level of professional education, including vocational and pedagogical education.

We would like to emphasize that the development of vocational education in the context of the noospheric paradigm as well as state, economic, and social institutions involve filling them with noospheric humanitarian meanings based on the knowledge of the evolutionary development of the biosphere and its fundamental importance for the existence of the mankind. We consider the most significant movement in this direction to be the strengthening of the fundamental nature of vocational education based on the latest achievements of science and practice, new information and communication technologies; the transition from the knowledge target priority to achieving the social anthropocosmic competence of vocational education graduates; the integration of natural, human, and technical knowledge, skills, and art, which allows predicting the future and considering this integration as an extension of the humanitarian space of modern education; the primacy of moral values over consumer values on the basis of universal ethics, which recognizes the value of life in all its manifestations, including the live Space; the formation of students’ critical and creative thinking; the development of the responsibility for the consequences of future professional activity, the awareness of its biosphere functions, and understanding of the Man as a cosmoplanetary phenomenon that is responsible for the existence of the Earth’s biosphere.

Such conceptual suggestions require innovative studies aimed at designing educational systems, developing new models of anticipatory education and new educational technologies that will form not only the professional qualities of a graduate of professional training at all levels but also the personal qualities of a noospheric Man. However, teachers are hardly prepared to such semantic twists in vocational education; most of them are not yet carriers of the noospheric culture, are not ready to engage in the process of filling special noospheric content into traditional school subjects and to the integration of human, technical, natural sciences and art. That is the conclusion we have reached as a

result of a survey conducted at the courses of improvement of psychopedagogical skills of university, college, vocational training centre and skill improvement educators for different areas of production and service at the Department of Methodology of Professional Pedagogical Education of the Russian State Vocational and Pedagogical University in 2010—2014. The study covered 276 professional teachers, including teachers from professional and educational organizations, specialized universities, colleges, secondary vocational education establishments, training centres, and skill improvement centres of Sverdlovsk region. The results of the study demonstrate that only 8% of teachers use noospheric subjects in their teaching activities. The study has also discovered that many teachers, particularly those from colleges and training centres for white- and blue-collar employees, are almost not familiar with ideas, concepts, and theories of the integrative character in the sciences of the nature, the man, and the society especially at the junction of different sciences (e.g., noospherology, noospherism, space anthropology, noospheric cybernetics, cosmology etc.) and often do not see the need to include their fragments in the content of educational programs, at least at the level of general cultural or futuristic ideas.

Addressing these areas of the sciences about the Man and his place in the biosphere and the noosphere not only expands the consciousness of teachers themselves but is also reflected in the teaching methods, contributes to the development of noospheric and space thinking of students, forms values of the non-destructive exploration of the nature of the Earth and the nearest space, provides the moral and ethical orientation for the future development of the global civilization, any country, any ethnic group of the planet, and instills social norms of a creative nature.

The period of vocational education is marked by the beginning of the process of an active construction of one's life, which will take place in a particular society with ideals and goals that are inherent to the society in question. However, this requires certain conditions, factors, and ways of knowing the future. As noted by A. Peccei (1980) (the first president of the Club of Rome), the Man is unable to predict the future but can create it through imagination.

The humanist concept of life at the present, the highest stage of human evolution requires the Man to stop, finally, looking into the future and to begin to create it instead. The Man must look further ahead and to give equal attention to both present and distant consequences of his actions, including the entire period during which these consequences can occur. The Man must decide what he would like to see the future and regulate his activities in accordance with that purpose.

We should note that A.D. Ursul (1993) considers the central problem to be the issue of creation of a fundamentally new intellectual environment in the society. Such an environment sums up all the intelligences, rather than averages them, in order to create a mind that contains the work of individuals that constitute the society instead of an averaged, collective mind (Ursul, 1993); therefore, the noospheric approach to the development and the implementation of educational programs requires, first of all, the release of creative intelligence of every individual on the basis of the respect for the humanity, the inclusion of the results of his rational thinking activity in the socio-communicative and

intelligent virtual environments that can combine the knowledge and provide mutually acceptable solutions that optimize the process of civilization while expanding the humanitarian space (Ursul, 1993).

The above statement demonstrates the importance of psycho-pedagogical preparation of a teacher in the noospheric pedagogy paradigm, the development of its problem field based on the new achievements of the sciences about the nature, the man, and the society, and the vectors of civilizational development.

The first stage of our study of the noospheric pedagogy develops its conceptual apparatus, selects the content for vocational and pedagogical education and professional training programs, improves the psychological and pedagogical training of teachers who implement various network educational programs in the field of professional and pedagogical training of bachelors and masters. The first result of this study is a theoretical model of a new teacher type in the noospheric educational paradigm presented in this paper. We have designed this model in the context of the features of networking of vocational and pedagogical education and professional training.

The selection of theoretical and methodological fields of the study, the network educational programs in the noospheric pedagogy is associated with the features of the higher vocational and pedagogical education for the purposes of training teachers and vocational training masters. Vocational training is the type of education that is aimed at studying the acquisition of knowledge, skills, and formation of competencies that are needed to perform certain labour or official functions (certain types of employment, official activities, and occupations).

Current research in the field of professional pedagogy, which provides for a scientific and methodological basis of professional training, offers optimal conditions to train the Man in different working professions and in the implementation of service and infrastructure-maintenance production, management, and overall employment functions. However, professional pedagogy does not affect the noospheric aspects of teaching. Optimum conditions for the inclusion of noospheric aspects of pedagogy (the noospheric pedagogy) can be found in network training programs and networking of training centres for working professions that are associated with their implementation; application qualification centres; and specialized departments of universities, institutes, and colleges, vocational and pedagogical education institutions of the higher education and the secondary vocational training with the development of logistic education centres that can assume the noospherization of the educational process. One of the possible passionary centres can be Russian State Vocational Pedagogical University, a leading centre for the training of teachers and vocational training masters in Russia, which unites more than 80 educational organizations in the vocational and educational network and that develops training programs for vocational education and training through a specialized educational network, including very separated territorial centres of training of workers in many areas with due consideration of the territorial specialization of production.

The networking of vocational and pedagogical education is a form of networking among organizations that are engaged in professional and educational activities with the consumers of educational services, which implement the programs of professional training and general education

(specialized education in senior classes) that is aimed at job training in different sectors of the economy, the service sector, career guidance, and professional self-determination of schoolchildren and interested business entities, for which employees are trained.

The network form of implementation of educational programs provides an opportunity for learners to master an educational program using the resources of several organizations that are engaged in educational activities and allows combining the intellectual, informational, and material and technical resources of the education sector and other economic activities. The network creates equal conditions for vocational training in different age groups of the population that reside not only at the location of educational institutions but also in remote villages.

Networking of different types of educational institutions that have received regulatory support from the government (the Federal Law “On Education in the Russian Federation”, 2012) will enable addressing the emerging educational issues better and more adequately. A more detailed description of the network interaction model for educational institutions is provided in our work (Akimova, Dorozhkin & Sikorskaya, 2014).

Addressing the noosphere and the noospheric man by means of the noospheric pedagogy and noospheric education through networking and training of teachers and vocational training masters is strategically important not only for the solution of purely professional problems but also for raise of the overall level of education of the working population that masters training programs in the field of any profession in the production and the service sectors.

Conclusion

This study has been supported by the scientific and educational community: the Russian Academy of Education, the Noosphere Public Academy of Sciences (St. Petersburg), the Corporate University of Noospheric Education (Ekaterinburg). The results of theoretical research and the model of a new teacher type in the noospheric pedagogy paradigm that was developed and introduced for the first time in the discussion of the international scientific and educational community is implemented in the humanitarian space of vocational and pedagogical education; certain aspects of the noospheric pedagogy are used in practice by innovative educational institutions (Lyceum No. 3 of Ekaterinburg, Ekaterinburg City Children Ecological Centre, Russian State Vocational Pedagogical University, Ekaterinburg Engineering College, and Sverdlovsk Regional College of Medicine).

The authors have conducted a theoretical and methodological analysis of scientific literature on the issue of this study and propose a proprietary model of the formation of a new teacher type in the noospheric pedagogy paradigm that develops the idea of noospheric education through networking which expands the humanitarian space of education; also, we propose a working definition of the concept of the “noospheric pedagogy,” by which we mean the direction of pedagogy that studies the comprehensive educational system of the anticipatory noospheric education, which forms the Man with a co-evolutionary worldview who feels and consciously acts like a part of the Cosmos and who is responsible for life in all its manifestations (Sikorskaya, 2007).

Implications and Recommendations

The above results of the study may be useful for the purposes of development of a vocational and pedagogical education system, attainment of noospheric competencies by teachers and students, as well as the development of networking of educational institutions of different levels, which will contribute to the expansion of the humanitarian space on the basis of the noospheric pedagogy and social partnership of different types of educational institutions.

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Disclosure statement

No potential conflict of interest was reported by the authors.

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