

Innovative Resource Dynamics in Pedagogical Higher Educational Institution

E. A. Martynova, E. N. Rodina, E. N. Chekushkina & R. G. Kostina
Mordovian State Pedagogical Institute, Russia

Abstract

The article considers the innovative resources dynamics of vocational educational establishment in the context of the Mordovian State Pedagogical Institute named after M. E. Evseviev. Today, in the context of innovative economy formation in Russia, numerous social changes are taking place due to increasing integration of science, education and production. These trends require initiation of the research on the interaction of institutions in complex economic systems. One of the key areas is concerned with the study of science and education integration forms as exemplified by contemporary higher education institutions, which are transforming into an innovative organizations, as well as quality assessment of their intellectual and creative capacity development. The aim of this work is to identify changes in the contemporary pedagogical higher educational institution, conditioned by general trends in the transformation of socio-economic systems. The complexity and diversity of the research subject predetermined the use of the approaches, such as comparative historical method, document analysis, as well as axiological and systemic analysis. The analytical results of scientific-research and scientific-pedagogical practical work of the pedagogical institute allow talking about significant innovative capacity of its intellectual resources, which has been rapidly and considerably increased over the past five years.

Keywords. Vocational education, pedagogical higher educational institution, innovative educational organization, innovative capacity, innovative resource.

Introduction

Contemporary society is characterized by dynamic processes of social change associated with the use of modern scientific achievements and the intellectualization of major production factors that change indicators of economic development. In the leading countries of the world, the share of new technologies and equipment based on new scientific solutions accounts for 70 to 80% of gross domestic product increment. Integration of education and science was legally defined by the Federal law # 308-FZ, 01.12.2007 "On Amendments to Certain Legislative Acts of the Russian Federation Regarding Integration of Education and Science" (Mokhnachev, 2012). This federal law gave the impetus to the development of new types and categories of higher educational institutions, for example, federal and research universities.

The trend of becoming high schools as innovative organizations that can adapt to the market and are self-developing system, seeking for an adequate response to the dynamic environment of contemporary society while maintaining the quality of the core functions, has

become extremely relevant. Innovative activity of the higher educational institutions represents an educational-scientific-innovation process structuring, research and development activities, organizational and technological preparation of production, implementation (or conversion into innovation) and design, dissemination to other areas (diffusion), as well as the strategic direction of human capital formation, which is the main factor of innovation-oriented economy development (Vladyka, 2009). These organizations define the further development vectors and become something more than conventional organizations operating in a given field.

In this context, the attention of scientists to the problems of higher pedagogical education increases, since its main purpose is to train specialists in general education (preschool, primary, basic and complete education), who bear special responsibility for the formation of innovative personality under the conditions of objective social need. Innovative personality can be called the individual capable of comprehension of meaningful existence and his own very self with due consideration of the current societal needs, leading to the creation of a new social reality (Rodina, 2013).

The American sociologist H. Smith emphasized that any nation starts with school, which is a mirror of the society, as well as the institute, where society transfers its basic values to the younger generations and creates specific models of human behavior. In his view, the differences in the education systems of various countries are correlated in some way with the essential characteristics of their economic systems (Smith, 1995).

Present-day educator should provide not only the transfer of knowledge and skills, but ensure the formation of abilities to respond appropriately to unusual situations, apply fundamental knowledge and principles in a broad and unpredictable contexts, focus on innovative development as a constantly renewable process of creating innovations in all fields of activity. The educator should act as a carrier of the idea to create the main resource of the contemporary economy, i.e. human capital, which includes socially useful human qualities. This means that the educator should possess the basics of innovative thinking and be an innovatively thinking person (Barakovic, 2011).

Institutions of higher pedagogical education are an important component of the Russian education system, determining the quality and prospects of its development. Vocational education as part of social life emerges at a certain historical stage and is developing within the unity of theoretical and practical components.

Methodology

The complexity and diversity of the research subject predetermined the use of the following methods:

- comparative-historical method, which enables to acquire the knowledge of different historical forms of innovative resource development;
- analysis of documents, allowing to identify the evolution dynamics of the innovative resources of the Mordovian Pedagogical Institute;
- axiological method, associated with the formation of value-motivational structure of the innovator;
- system analysis, forming a holistic understanding of the investigated phenomenon.

Results

The Mordovian State Pedagogical Institute named after M. E. Evseviev is one of the leading scientific community centers of the region. The number of teaching staff with scientific degrees and titles amounts for more than 75% of the total staff. The Institute has officially registered two research and education centers, namely “Science Education” and “Humanities and Education”, performing different kinds of research in the fields of mathematics, biology, medicine, history, philosophy, economics, linguistics, and pedagogical education. Responding to social procurement, the Institute pays great attention to innovative activities. The structure of the Institute’s innovation divisions includes many research laboratories and research and practice centers, such as laboratories on digital microscopy, mathematical modeling, nanotechnology foundations as well as laboratories on the development of professional competence of the teacher and the psychologist in the continuous education system, integrated education of children in the system of contemporary education, ethno-cultural training of students, scientific-methodological support to prevent extremism and xenophobia in the Russian education system, and continuous music education (Kobozeva, 2014). Besides, the Institute has established full-day centers (Vinokurova, 2014), acmeological center (Zhuina, 2014), center for physical culture and healthy lifestyle, arts education, consulting and educational center for students, language and literature teachers and heads of methodical associations of educational institutions of the Republic of Mordovia. All mentioned laboratories and centers are systematically and dynamically functioning within the structure of the Mordovian Basic Center for Pedagogical Education (MBCPE).

The MBCPE is a model of innovative development of pedagogical education. Its novelty lies in the identification, development, justification and implementation of the principles, approaches and integration mechanisms of the intellectual, human and material resources of different educational structures and communities to ensure their development, improve the quality of vocational pedagogical education as meta-education capable of fulfilling the social procurement for the formation of cultural and productive personality.

The MBCPE operates in the most different areas, such as educational, educational-methodical, scientific and research, scientific and methodical, experimental and innovative, expert and diagnostic, information and analytical, consulting, publishing, as well as training and professional development of faculty members. The purpose of this multifaceted research and creative project is to provide continuous educational and professional programs at various levels of the education system, retrain and professionally develop teaching staff, working in the field of education as well as to create the information community of the teachers with a new innovative outlook and creative thinking, conversant with innovative learning technologies (Kadakin, 2012).

The Institute aims at building educational space, whose main objective is compulsory formation of spiritual, moral and cultural qualities of the individual student, ensuring a high cultural standard of future teachers through the development of integrated cultural, moral, legal, and social measures.

The Institute established “Socio-Humanitarian Technology Park”, which provides scientific and methodical support for researchers representing different structures of the Institute, as well as students and graduate students of various specialties. It serves to provide comprehensive training of highly qualified young specialists in the field of socio-humane sciences, and integrates scientific and pedagogical potential of the Institute’s subdivisions towards conducting fundamental and applied scientific studies and projects. Despite the title, which determines the profile of the technology park, it is based on the interdisciplinarity principle and

seeks to increase participation of the scientists from (research and education centers (REC), research and practice centers (RPC), and scientific research laboratories (SRL) (Martynova, 2013).

Discussion

The history of pedagogical education in Russia starts in the 19th century. In the end of 1917 it became quite contemporary in the context of methodology of pedagogical activity. The need for rapid industrialization of the agrarian state had changed the education system in Russia. It was separated from the influence of the church and it became secular, free and universal. The education was conducted in the Russian and other national languages. The pedagogical intellectuals of those times, such as S.T. Shatsky, A.P. Nechaev, L.S. Vygotsky and K.N. Wentzel, relied on the knowledge of pedagogical principles and techniques of pre-revolutionary figures, such as K.D. Ushinsky, L. N. Tolstoy, V.P. Vakhterov, P.F. Kapterev and others. Shatsky and Wentzel argued the idea of the intrinsic value of childhood, focusing on the concept of free education, implying natural development of the child's talents as the main objective as well as the formation of a versatile personality, endowed with qualities of the social creator.

Later on these humanistic principles were developed and successfully implemented in the practical activity of V.A. Sukhomlinsky, Sh.A. Amonashvili, V.F. Shatalov, S.N. Lysenkov, and E.I. Ilyin, asserting the ideas of cooperative pedagogy. Each of them made a certain contribution to the development of theoretical and methodical grounds of personally oriented approach, which became one of the main vectors of the Russian education system. This approach involves creation of conditions conducive to comprehensive display and proper development of the trainees' personal features, rather than formation the desired traits (Abramova, 2004).

Its practical implementation involves evolution of the technologies, capable of providing the most favorable conditions for self-cognition and self-actualization of each student, development of his unique personality, overcoming alienation from externally defined conditions, strengthening intrinsic motivation for learning and self-education, and upliftment of creative abilities.

These ideas formed the basis of a new paradigm in education. The basic principles of this paradigm include humanization, humanitarization, differentiation, diversification, standardization, variability, multi-level system, fundamentalization, computerization, individualization, continuity, and professionalization. The change of educational paradigm in our country has started in the early 90-ies of the 20th century in response to social procurement, reflecting the changes in the economic system. This caused a transformation of the pedagogical relationships in all structural components of the educational system, as well as changes in the relationships between principal and subordinate, educator and student, production and educational institution in general. New relationships gradually turn into relationships between trainees and educators, which are based on partnership and cooperation (Shibaev, 2012). The formation of this paradigm is due to the socio-economic realities of our time, requiring training of competitive specialists in any professional field.

To be in demand in any field of activity, for a specialist it is not enough to be armed with just knowledge; professional must be able to apply knowledge in a rapidly changing social reality. In 1988, the National Council for Vocational Qualifications, established by the UK government, developed a universal system of professional qualifications based on five levels of competence when solving any operating tasks. At that, the highest levels of competence require the abilities to

solve challenging and unusual problems, to apply fundamental knowledge and principles in broad and unpredictable contexts (Brooking, 2001).

In the course of employment, individuals must focus on constantly renewable innovative processes in all spheres of activity. Strengthening the dynamics of the innovations becomes sustainable social need that cannot be satisfied at the expense of individual creative achievements. Innovation processes involve not only new initiatives, but also their advancement into the sphere of consumption. Therefore, innovation activity must become a large scale, acquiring the status of a significant social resource.

As known, the most global revolutionary changes are prepared and accomplished by the common efforts of a certain number of people. The American sociologist H. Smith believes that computers are less important than human resources, because technology development, which has become one of the most important ways of contemporary society's existence in a competitive environment, is ineffective without proper development of people's capacity (Smith, 1995).

In scientific literature there are a number of equivalent concepts, such as "intellectual recourse", "intangible capital", "intellectual capital", and "innovative resource". All these definitions stress the fundamental role of intellectual activity as a new production factor in the post-industrial society. Innovative activities become a source of added value, providing the benefits to new products, services, new technologies and their implementation. In relation to higher education institutions, we consider the qualification, professional training, innovative approach of faculty members, their involvement in innovative projects, research findings, represented by patents, licenses and know-how as the most important component of innovative resource. There is also the notion of organization's innovative capacity, which refers to its ability to perform actions that ensure the achievement of innovative objectives and the implementation of innovative projects. Innovative capacity of the organization includes an aggregate of scientific, technological, infrastructural, financial and socio-cultural capabilities required to provide innovation.

High school curriculum is designed to give students knowledge and form personal qualities, necessary for contemporary social conditions. This means giving them the possibility to become active actors of the innovation processes and part of the organization's innovative capacity. Noting the generally positive dynamics of the education system in accordance with the above mentioned goals and needs, we can identify a number of problems associated primarily with the qualitative composition of pedagogical staff at secondary schools. On the one hand, there is a surplus of teachers; on the other hand, we face a crisis in the supply of school by subject matter specialists. Still many universities train personnel without regard to their employability. The analysis of the teacher's training system in higher education institutions has shown that pedagogical education today is not focused on social procurement and the nature of pedagogical activity, and it ignores specificity of educational institutions (Kadakin, 2012).

In such circumstances, a great responsibility is assigned to the institutions of higher pedagogical education. They are qualified to create new experimental educators and innovators, who in turn will educate and recreate the social medium of the next generation. High school is designed to give future educators the knowledge, to develop professional competence, necessary in the contemporary social situation.

Current socio-economic reform requires continuous updating and development of the education system under the influence of scientific-technical and humanitarian progress. In the

context of science, education and production, the higher education institution should become an innovative organization to conduct the activities, such as:

- training of scientific and pedagogical staff, capable of implementing an innovative education model;
- professional development and training of innovatively active specialists demanded by the labor market;
- generation of innovative ideas;
- promoting knowledge about contemporary educational innovations in the course of lectures and practical training that gives impetus to competitiveness in the educational services market;
- ensuring innovation of methodological support for educational process, training process of technology, providing innovative educational services, etc.;
- the implementation of the joint efforts focused on the creation of innovations with innovative firms (scientific research activities, projects review, and consulting services) as part of the integrated structures, which are formed on the basis of the national innovation system;
- creation of high school educator image as an innovator (Shibaev, 2011).

It is the pedagogical institution, equipped with the latest technologies, information and communication training resources, research educators, exploring regional issues of education, integrated with educational institutions that can become a system-forming factor of this strategy (Kadakin, 2012).

The Mordovian State Pedagogical Institute named after M. E. Evseviev is one of such education institutions, which is the center of pedagogical education, science and culture of the Republic of Mordovia. The education institution was established following the Resolution of the Council of Ministers of the RSFSR of June 30, 1962, and the Order of the Minister of Education of the RSFSR of July 19, 1962. The Mordovian State Pedagogical Institute provides training of high qualification pedagogical personnel, satisfying the need in highly qualified specialists for the system of preschool, general, inclusive, vocational, postgraduate and extended education. Over the years, the Institute has trained about 30,000 professionals, organizing and conducting fundamental, exploratory and applied scientific research in close relation with the educational process at the same time (Shukshina, 2013).

Describing the activities of the regional scientific community, it is necessary to address the notion of social procurement. This relationship determines the content and trend of scientific creativity. By definition, social procurement is a socio-historically conditioned need of a society in a certain innovation. The social procurement concentrates on human resources around certain problems, thereby increasing the creativity, which is used by the scientific community to resolve these problems.

The response of the scientific community to the social procurement is reflected in the work on research topics. The large amount of basic and applied research, related to studies carried out on a competitive basis in the framework of various grants, was accomplished in the Mordovian Pedagogical Institute during the period from 2010 to 2015. Grant competitions are held every year by the foundations of the Ministry of Education and Science of the Russian Federation, the Russian Foundation for Humanities, the Russian Foundation for Basic Research, the

government of the Republic of Mordovia, as well as various Russian and international foundations. Each year during the period from 2006 to 2013 the Institute conducted scientific research in the frameworks of 18 grants, including those funded by the Ministry of Education and Science of the Russian Federation.

The insights of scientific-research and scientific-practical work of the pedagogical Institute allow speaking about significant innovative capacity of its intellectual resources, which has rapidly and considerably increased over the past five years. This is evidenced by the results of the creative work undertaken by the Institute's staff. For example, during the period from 2010 to 2014 the Institute has published 202 original monographs (about 40 monographs per year); 255 collective monographs (about 51 monographs per year); 184 collections of research papers (about 37 publications per year); 13 text books, including classified publications in the framework of Education Review Office (ERO), the Ministry of Education and Science of the Russian Federation, and the Ministry of Education of the Mordovian Republic; 1187 articles in VAK (State Commission for Academic Degrees and Titles) *есть официальный перевод аббревиатуры ВАК - High Attestation Commission (HAC) list journals* (an annual average of 238); 55 articles in scientific journals included in the SCOPUS and Web of Science data bases (an annual average of 11); and 95 publications in other international editions (19 publications per year).

Intensive activity on holding and participating in various workshops and conferences of different levels can serve another example. Thus, during the period from 2010 to 2015 academic teaching staff of the Institute was involved in 225 international conferences and 10 workshops, 71 conferences and 6 workshops of national level, 26 conferences and 11 workshops of inter-regional level. During the same period, 113 scientific events were held, of which 10 were international, 26 were national, and 12 were inter-regional.

A number of conferences and workshops, organized on the basis of the Mordovian Pedagogical Institute during 2014 – 2015 were devoted to discussions of the problems of increasing the innovative capacity of scientific and pedagogical community (a chain of republican scientific-practical workshops titled “Innovations in teaching informatics at school”, workshop for educators of preschool educational institution “Innovative approaches to preschool education”, republican practical workshop for music teachers “Innovative approaches to the design and implementation of the conceptual content of music programs in accordance with federal state educational standards”, international scientific and practical conference “Traditions and innovations of multicultural education of younger children”, 3rd all-Russian scientific-practical online conference for postgraduate students, undergraduates and students “Contemporary humanitarian technologies in education: subjectivity, creativity, spirituality”).

Conferences, workshops, symposiums and fora are a kind of dialog-based collective creative activity. The dialogue aims at identifying the communicative potential of participants, contributing to their transformation into cooperating parties based on collaboration and co-creation (Chekushkina, 2014). All these events promote personal and social activity, the need for reflection and self-development, commitment to lifelong learning, ability to constructively resolve socially and personally significant problems. “The mutual understanding, recognition, argumentation and consensus are regarded as constitutive elements of human social network” (Rodina, 2015).

A dialogue, as communicative discursive mode refers to a joint search for meaning (truth). The truth of the communication process is determined only by the participants involved in this discussion. The authentic life of personality is accessible only through the dialogical penetration, to which the personality freely reveals itself. According to M.M. Bakhtin, dialogue promotes the

assertion of another "I" and, therefore, the approval of self-assertion. Dialogue and debates of a personality with others and himself/herself contributes to the awareness and comprehension of person's own actions, attitudes and values. According to M.M. Bakhtin, "the very being of a human (both outward and inward) is the utmost communication. To be, means to communicate dialogically" (Bakhtin, 1972). It is in the course of communication, coexistence and co-creation people can really realize themselves. These kinds of collective activities are focused on understanding and rethinking by human of his/her relations with objective and social world, the construction and the shaping of new images of his/her own and others' "I", understanding of the self and others, the search for truth.

Thanks to the scientific discussions, any discoveries and inventions are transferring to the status of scientific innovations. Discovery becomes scientific innovation only when it receives certain recognition in the scientific community. Therefore, as the innovation evaluation criteria, novelty should be considered in conjunction with the extent of its spread and the impact on the scientific community.

Since 2012, the innovative experience of the Mordovian State Pedagogical Institute is closely examined by the Russian Academy of Education (RAE). In November 2013, the final meeting of the Expert Council, devoted to the performance of the RAE pilot sites, summed up the results of the Institute's years of performance as a basic center of pedagogical education in the region. Research capacity of the experimental program implemented in the Mordovian State Pedagogical Institute was highly appreciated by the Academy. The emphasis was placed on the relevance and importance of the problems of modernization of higher pedagogical institution as well as the promising approaches to their solution. The experts' assessment resulted in assignment of RAE public accreditation and giving the Institute status of the experimental site for the development and implementation of the high school model as a basic center for pedagogical education in the region.

Conclusions

The changing trend of the state policy in the sphere of education, directed on formation of a balanced and sustainably developing sector of research and development as well as the mechanisms of attracting young specialists into science and innovative activities, served the basis for creation of new forms of research activity. Federal target program "Scientific and Academic Staff of Innovative Russia" with a total funding of 100 919,22 million rubles [Resolution, 2008], conceived by the Ministry of Education and Science for 2009-2013, served the initial impetus to form the innovative image of the Mordovian State Pedagogical Institute. Among more than 100 considered applications just 30 proposals were approved. In 2010, the project of the shared knowledge center, "Mordovian Basic Center for Pedagogical Education" was supported in the framework of the open competition on selection of innovative infrastructure development programs, including support for small innovative businesses of federal educational institutions of higher vocational education.

The Institute is the only pedagogical institution among the 56 Russian institutions of higher education, which has received state support for development of innovative infrastructure in the framework of implementation of the Resolution of the Russian Federation Government of April 9, 2010, "On State Support of Innovative Infrastructure Development in Federal Educational Institutions of Higher Vocational Education". Innovative infrastructure of the Institute allowed starting the implementation of federal experimental pilot project "Development and

Implementation of the Higher Educational Institution Model as a Basic Center of Pedagogical Education in the Region” under the guidance of the Russian Academy of Education. In 2011, the Institute won the project programs on strategic development of state educational institutions of higher vocational education.

Thus, the changes in the contemporary society alter the logic of social life, which builds new forms and laws of social relations, transforming the meaning of all development resources. Human potential, generally reflecting the increased anthropogenic factor of social existence, starts to play the leading role. The management of public progress based on the development of creative capacity of innovative actors, becomes one of the main landmarks of the most countries. The scientific community comes forward as one of the most important innovators. The statistics considered above clearly shows high level of creative capacity of the scientific community in the Republic of Mordovia.

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