Educational environment of universities to creating technosphere safety and development of innovation economy

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Abstract. The paper examines the role of education in economic development from both a theoretical and a historic perspective, addresses why education has been the limiting factor of sustainable development. Educated workers raise national income directly and productivity of labour. This paper shows the impact of human capital development on economic growth in national economy through educational environment of universities in condition technosphere safety. In the study recommended that government would guarantee quality education environment of universities for development of innovation economy. Government should also commit more funds to enhance human capital development and environmental protection.

1. Introduction

Russia takes part in international integration processes, stays on the way of the national economics reforming and participates in the united globalization processes. Russia is an important participant of international markets: of natural resources, work force, technologies, goods and finances services. During the recent years the Russian economics is characterized by unsteady rates of economic growth which was not higher about 1-2 per cent per year. Russia carries out important governmental, structural and educational reforms which are changing the country's competitiveness and openness. One of the main reasons for containing the economic development of the country is reduction and decrease of human resources quality that is necessary for intensive model of economic growth when forming the innovation development strategy.

To solve the actual Russian tasks it is important to choose the right way for educational system reforming, for development of corporative educational system (manpower training for large enterprises), for increase of effectiveness of business and educational institution interaction in the development of programmers of specialists training. The development of continuous and multilevel system of education in the country at the expense of realization of modern educational standards and educational technologies will allow to integrate the Russian educational system into international market of educational services. Russia finds it important to reform the educational system by means of embedding it into global integration educational processes stage by stage preserving national specificity, gaining progressive experience of international development of leading countries.

2. Theory

Education plays a key role in formation of structural policy and development of global competitiveness. There is close connection between the development of human resources and economic growth of the country, the increase of the education level leads to the growth of labour productivity and provides

higher national incomes accelerating rates of economic growth. In 1920s an American economist P Douglas and a mathematician H Cobba [1] analyzed the role of investments in human resources as an important factor in economic growth. The education forms value of human resources in economics, it is a signal that partially eliminates defects of information distribution between an employer and an employee. In 1957 a Nobel Prize winner R Solow [2] elaborated a technique for defining people contribution to economic growth. In 1985 an American economist E Denison [3] proved the role of education and personnel retraining in increase of rates of national economic growth. Since 1980s R Lucas [4] recognized human resources a dominating factor of economic growth.

The problem of study and mastery of real mechanisms of human resources accumulation, search for effectiveness of management, formation, use appeared in 1990s. The models of economic growth are used in a nowaday analysis for carrying out recommendations when choosing the policy of economic development. In fact, P Romer [5] and his followers introduced in new models of endogenous economic growth the structure, it reflected specificity of innovation activity. The endogenous models in market economy describe a real scheme of innovation process organization forming competitive innovation sphere. They allow to form some institutes of innovation process management on macrolevel.

A well-known economist M Porter [6] devoted his researches to the analysis of problem of global competitiveness in national economics. The education quality may be estimated by means of various operation factors: knowledge-abilities-skills, the social capital accumulation. The leading approaches to the analysis of the educational model were formed by L Spencer, S Spencer [7], M Dalton [8], and other researchers such as V Chouhan, S Srivastava [9]. Education is a prerequisite for formation of intellectual rent as a dominating national revenue source and formation of innovation model of economics development. The world experience testifies that creative potential of human is the main national wealth [10, 11, 12].

3. Point

The labour market plays an important role in educational services quality. The youth specialist market is one of the indicators for effectiveness of the educational system functioning of the country. It reveals the role of Institute of Higher Education in the development of the educational system of separate regions, reveals up-to-date directions of reforming of specialists training system and the development of educational services. The structural changes of labour market generate a need to reform the educational system: specialists training is complicated, new professions appear, which require professional non-classical training. The development of the educational system, business and educational institutions interaction allows to solve the problems of formation of specialist professional culture in economic sphere, increases the degree of their adaptation, develops their communicative skills and professional competencies.

Human resources are actively accumulated and used by leading successful international companies, form important competitive advantages in various markets. The technologies of creation, development and effective use of human resources determine the leaders among countries in international economics. The educational system of the leaders is directed at potential revelation of student personality, at communicative skills development, at effective management of professional competence. The educational system of leading countries is organized in such way that a student getting the high-quality education has high competitiveness at the labour market, finds job quickly and is always claimed as a specialist. The use of additional study courses in education increases the quality of students training and differentiates the educational environment. The alternative and free choice of educational trajectory of student development as a future specialist allows to satisfy needs of society and inner personal needs by means of formation of valuable orientation in cultural and social sphere on the basis of communicative practice.

Countries and regions which pay too much attention to the educational system development possess higher competitiveness and reach both economic and social progress and prosperity. Education and its quality in the 21st century become the dominating strategy of development and competitiveness of countries in international economics. The UNESCO report [13] suggests that the educational system

reform in international community is inevitable and necessary as human resources are basic values in national economics. The educational technologies form the basis for human resources development and their global competitiveness and it leads to intensive economic growth on the basis of development processes, to increase the level of national competitiveness and sustainable development.

In Russia there is a development of the educational system on the basis of combination of governmental and private Institutes of Higher Education with high-level of heterogeneity of educational environment. Large national educational and research centres compete in educational environment of the country with small regional colleges to which the leading educational technologies are not available, there are certain problems of their integration into united open educational environment, and there are not enough investment resources for their active development.

4. Discussion

The nowaday task of effective governmental policy lies in active encouragement of the educational system reforming and formation of necessary institutional space, support of fair competitiveness at the market of educational services, concentration and accumulation of human resources, increase of human resources quality. The globalization leads to the necessity to improve the educational system of many countries and follow the leader's example, adopt their achievements (innovations) in formation of the educational system and specialists training.

The special role in formation of effective and qualitative educational environment plays communication which conditions the development level and competitiveness of a future specialist. Professional, interpersonal, intercultural communication allows to manage the formation of professional competencies of future specialists and educational process quality, determine global competitiveness of human resources. Communication of the Institute of Higher Education is formed by the content of educational process, interdisciplinary communication, technology of knowledge monitoring, active methods of study. The effective organization of communication in the Institute of Higher Education should take into account individual features of students, formation of personal values, development of specialist's general and economic culture, peculiarities of his/her professional training.

The modern era is characterized by rapid industrial development and as a result, manufacturing plants widely interact with the natural environment. People have been facing environmental issues, and the more humanity has developed, the bigger has negative impact been on the environment [14, 15]. As the level of urbanization rises every year, the amount of waste, energy and resource consumption, emissions, discharges, electromagnetic, radioactive pollution and the total environmental burden increase too. High population growth rates, a huge increase in consumption, a sharp increase in the demand for energy resources, intensive development of industrial and agricultural production lead to the emergence of permanent foci of heavy pollution of the biosphere with global irreversible effect. Directions for improving the educational environment of university in system of technosphere safety:

- to transform educational technologies to create the models of effective flexible educational environment;
- to elaborate the criteria to choose the optimal monitoring of educational process in specialists training and retraining;
- to reveal impact of the development of professional, interpersonal communicative processes on quality of the educational environment of university in the multilevel educational system;
- to analyze impact of inter-country communication and globalization on formation of specialist professional competence;
- to estimate a specific character of national educational system in the world trends to creating sustainable development;
- to integrate results in the field of sphere of evolutionary development of technologies of human resources management.

5. Conclusions

In the conditions of formation of Russian innovation economics it is necessary to use the progressive experience of development of multilevel educational system of universities. The transition of society in its development into informational economics increases the education value, determines human resources as the leading resources in economic development acceleration, forming new models of concentration, management and regulation of technosphere safety. The Russian educational system must be an effective instrument for human resources accumulation as a strategic factor of economic growth in national economics. Intercultural communication in higher education is the basis for improvement of specialists professional competence and for open educational environment as necessary condition for wide integration of innovation economics and innovation universities.

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