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GLOBAL AND RUSSIAN TRENDS OF MODERN EDUCATION

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Abstract

The main trends in changes in education became a response to external threats caused by globalization processes, new technologies and innovations in the age of new thinking and a new attitude to the changes. The economy and society as a whole need thinking and functionally competent personnel, capable of continuous updating and a reasonable change of their competencies and activities for a successful life in modern society. All this leads to a change in the philosophy of modern education for the formation of the digital economy of Russia. Today we are witnessing large-scale changes affecting a large number of people: globalization of production, communications, cultures, education systems; family structure changes, the population becomes more heterogeneous; economic competitiveness and social cohesion increase. Interest in life-long learning is dictated not so much by the requirements of the labor market as by the awareness of each modern person of the subjectivity of his life path. As a result, in order to satisfy the public request for the development of skills and competencies, the world education system and methodological approaches to training are being transformed. The list of professions of the future and the requirements for the qualifications of specialists are constantly being updated, technologies are rapidly improving and their application is becoming wider, the importance of an interdisciplinary approach and the integration of knowledge for solving socio-economic problems is growing.

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Keywords: Academic revolution, education system, individualization of education, intellectual internationalization, interdisciplinary approach, subjectivity of the individual



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1. Introduction

Education is the foundation for the development of each person and should help him become the subject of his life, find his own path, be able to meet the challenges of constant changes in the world and the demands of the modern labor market. It should predict trends in the future development of all spheres of public life and be ready to immediately respond to its requests. The world for which the traditional Russian education system was developed no longer exists; and even if we redesign this system for today, it can immediately become obsolete after 5-10 years of existence. These changes are the results of a new scientific and technological revolution. One of its most striking features is the acceleration of the technology life cycle: production, social, cultural and educational. The key stake of our time is innovation. The transformation affected everything: in the era of industry 4.0, industrial and educational technologies are not only rapidly updated, but also mutually complement and develop each other (Evezrov, 2015; Laszlo et al., 2017). Until the middle of the last century, such a rapid change of technology did not occur, and, therefore, a serious transformation of both the knowledge itself and the process of its transfer was not required. Often a person had only one profession throughout his life. Today, the education system should not prepare a person for a certain profession, but "form" a rapidly transforming specialist with a wide range of different competencies (Hard + Soft + Selfskills), providing the interdisciplinarity of his knowledge and skills, a researcher of life and professional situations motivated by the result, having a high speed of perception of information and issuing new original solutions. This will allow the graduate to be professionally competitive not only in his region, but in the world. Thanks to the acquired competencies, he will be ready:

- to solve problems that are not yet formulated at the time of training;
- to use technologies that have not yet been invented;
- to solve problems that are not yet obvious.

The success of a graduate is determined not by the amount of knowledge, but by the ability to use it in various new professional and life situations, in the skillful mastery of various skills. The essence of modern education is the development of engineering thinking (critical, systemic, creative); a combination in one person of natural-scientific, functional, digital and other various types of literacy; the ability to explore and create new things; communicate and collaborate; in personal qualities, thanks to which people can self-govern and self-actualize. Cooperation for the sustainable development of mankind should become a new principle of modern education.

2. Problem Statement

Today, self-determination, openness to new things, and convergence of connections between ideas that previously seemed unconnected are important, but for this it is necessary to have an idea of different areas of knowledge, to own modeling technologies and design competencies. Now it is not enough to be receptive to new information in order to be successful after training (Figure 01). Modern schoolchildren and students are ambitious and pragmatic. They easier understand and more actively accept the

technological and social changes in our society than adults (mature generation). Thanks to information technology, there are no barriers to communication for them, they do not notice barriers to professional and career growth. The generation of modern youth is already a priori ready for change and they want to choose their own life path. Time is becoming the most important and valuable resource and requires effective management. Motivating yourself to use time effectively means determining what rewards are needed to actively continue working on your own mission. In the days of Adam Smith, the main motivation was monetary, but now intangible incentives are becoming increasingly important: a free schedule, a good team, the prospect of professional growth.

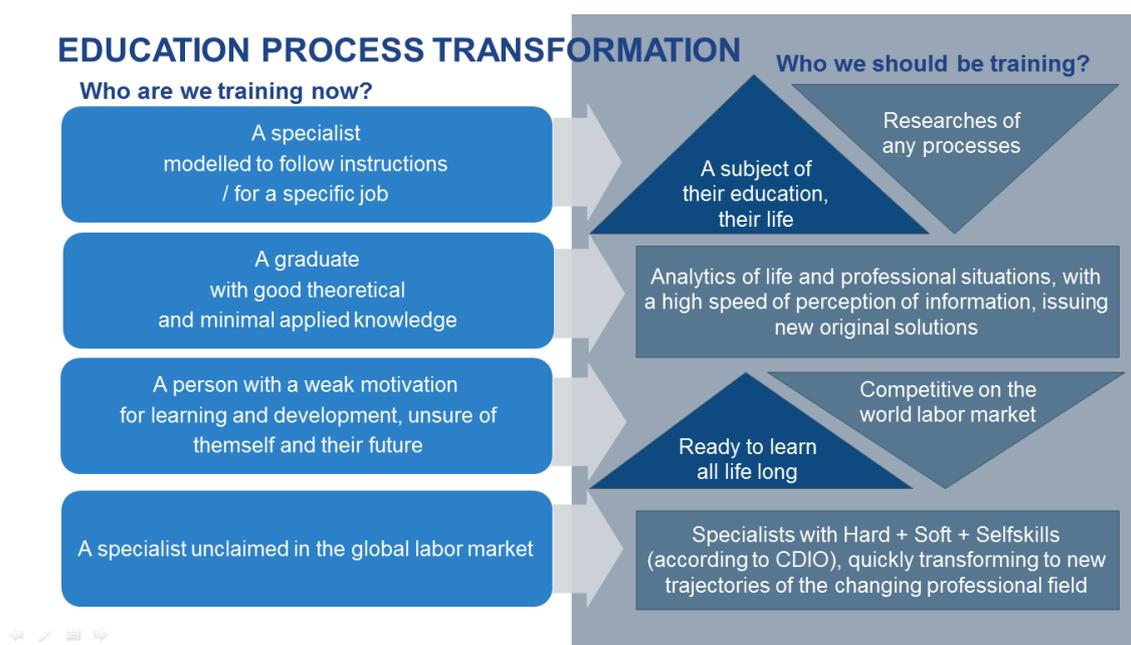


Figure 1. Scheme of transformation of learning processes

Many education analysts currently describe the growing demands of the labor market for graduates. (Donina & Vodneva, 2019; Du Toit & Verhoef, 2018; Fullan, 2016; Pont, 2017; Postma, 2014; Volkov & Livanov, 2012). A modern graduate should have a unique combination of competencies in depth and considerable breadth of fundamental, applied knowledge and soft skills, i.e. it is necessary to transform the focus of the education system not only on the development of research activities, but also on ensuring specific business needs. In his interview on April 21, 2020, Minister of Science and Higher Education Falkov (2020) confirmed the weight of this trend. This means that a change in the philosophy of education is necessary, which differs from the educational pipe that has been dominant in Russia for many decades.

To deepen and improve the quality of training, educational organizations must become an investor of knowledge, skills and mental intelligence in the success and growth of students. It is necessary to create such an informational and physical educational environment that motivates for efficiency, provides a high-quality educational process that meets the challenges of our time. It is compliance with modern trends in the development of society, the preparation of graduates for the professions of the future that will allow the

educational system to be always relevant and competitive not only in the Russian educational space, but also in the world.

3. Research Questions

Emphasizing the importance of research on educational trends for understanding the prospects of modern education as an answer to the global challenges of our time, the authors focus on the following questions.

- 3.1. What are the features of modern and promising learning technologies?
- 3.2. Is the education system able to meet the demands of the modern labor market?
- 3.3. How does the role of the state in the process of competition of educational systems change?
- 3.4. How important are digital technologies for organizing the educational process?
- 3.5. Personality subjectivity and individual educational trajectories: advantages or threats?
- 3.6. What is the significance of interdisciplinary interaction in the formation of professional competence?

4. Purpose of the Study

The purpose of this study is to discuss global trends in the development of society and the modern education system for the formation of a broad scientific discussion with the aim of developing methodological approaches to the conscious transformation of educational technologies and a competency-based model of education in Russian and foreign universities that allows one to feel free in the digital world.

5. Research Methods

To study these issue, the authors studied numerous sources of information, consisting of monographs, scientific articles by specialists in this field, as well as analytical information from the Russian and foreign business press, interviews with representatives of federal and regional authorities, business structures, and materials from thematic scientific and practical conferences. Being representatives of the Russian academic community, the authors have the opportunity to monitor and analyze on a daily basis the opinions of stakeholders in the educational process - teachers and administrators of various universities, students and applicants, representatives of research institutes and entrepreneurial structures that receive "the results of the educational process". The new socio-economic reality determines the need and demand for new conceptual and applied research in this area.

6. Findings

In the conditions of fierce competition and the rapidly changing social paradigm of the development of civilization, the education system also requires a new strategy that leads away from concentration only on educational activities and global transformations at all levels of its functioning.

6.1. Academic revolution

According to scientists (Altbach et al., 2010; Altbach & Rumbley, 2016; British Council, 2012; Zaitseva, 2017) besides massization and the global economy of knowledge, the signs of the academic revolution are also globalization, digitalization and a shortage of qualified and motivated personnel. The academic revolution requires a paradigm shift in education in accordance with global trends in the labor and education markets (Figure 02):

- from the state - the implementation of the relevant all-Russian policy;
- from educational organizations - self-determination in the framework of its implementation, taking into account its individual history and regional component;
- from teachers - multi-, cross- and interdisciplinary courses adapted to the challenges of the time;
- from academic, social and industrial-technological partners - joint project activities to the development of educational courses, the organization of educational practices, excursions and expeditions.

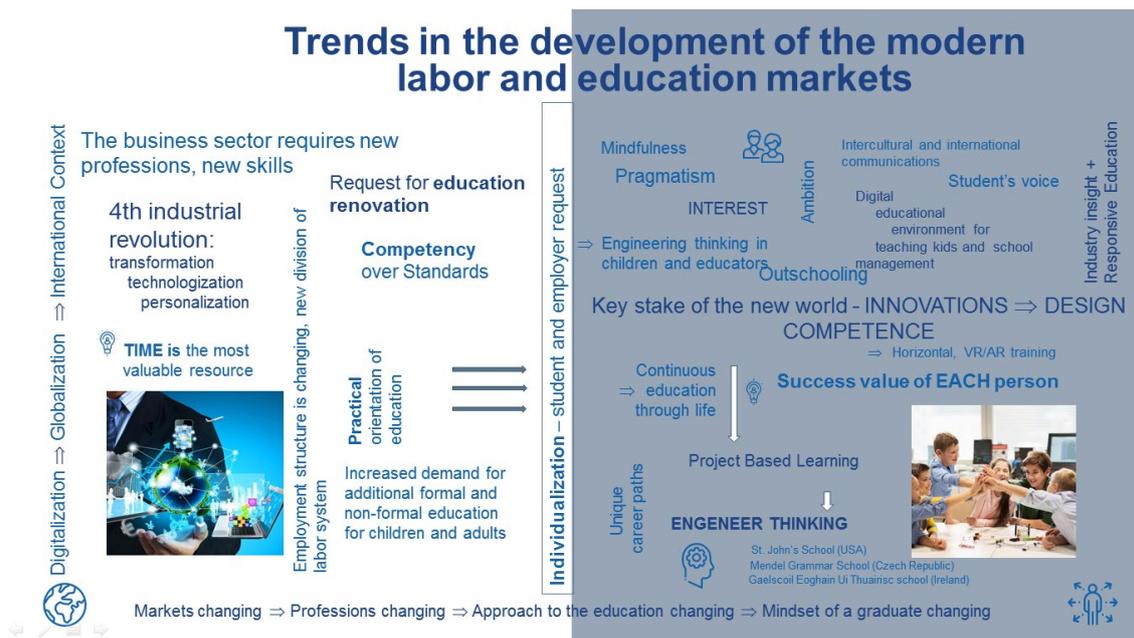


Figure 2. Development trends of the modern labor and education market

However, under the influence of the development of a creative economy, paternalistic structure, the usual dictatorship of elders, slow advancement in the career ladder, the inertia of leaders and scientific schools, the Russian education system faced an outflow of young qualified personnel into commercial organizations, demanding researchers and promising a faster career, more intensive mobility (Polterovich et al., 2007). And in order to “grow” a new teacher of higher education or to attract him “from outside”, the mechanical selection of personnel for teaching and research is not suitable: it takes time, financial investments, the organization of a modern educational environment and tools for effective motivation.

6.2. Intelligent internationalization

This problem has become particularly acute in the context of the global economy, the foundations of education, digital technologies and the internationalization of education. Obviously, reforming the education system not only in Russia is a necessary and adequate response to the socio-economic and socio-political changes taking place on the world stage.

Many countries have a state education policy, competitiveness and demand for graduates in the global market (De Wit, 2019; Egron-Polak, 2012; Leal, 2019; Wang, 2019). Classically, the role of the education system is the creation and augmentation of the country's human capital, which raises its rating in the world community. In the context of globalization, the internationalization of education is a form of economic resource accumulated by a person throughout life (Burdie, 1993).

Achieving this goal dictates to states the need to adopt the "rules of the game" of the global educational space, i.e. entry into the free competitive field of educational services and the rejection of directive centralized state planning. General and higher education systems around the world are faced with the problems of freedom to build a curriculum, contain costs and ensure the quality and relevance of educational services (Hazelkorn, 2019).

The main idea of this trend is the rejection of competition between education systems around the world, increasing the education of the entire population through achieving a synergistic effect from the exchange of knowledge and educational practices. A comprehensive and empirical review of the situation in the field of higher education in OECD countries demonstrates how good this approach is and it fully fulfills its task in the field of education, research and involvement in intellectual internationalization (OECD, 2019). An in-depth international comparative analysis of educational programs showed that the focus of future education is shifted from academic knowledge to interdisciplinary competencies, problem-formulation skills, cognitive and metacognitive skills, conceptual understanding of material, and constructive analysis of the situation (OECD Future of Education and Skills 2030, n.d.). Many countries of the world have joined the international transformational program "Education-2030: OECD Key Competencies Model" (Toguma, 2015).

According to this model, the role of the state in the process of rethinking educational reforms and establishing a common understanding of competencies, curricula and related aspects is changing. In addition, there is an increase in the exchange of practices with other education systems at the international level, open access to the results of advanced research, the inclusion of their own experience and practices in research results and the involvement of stakeholders in this dialogue.

6.3. Subjectivity in education

The variety of educational technologies and forms of knowledge transfer is in the hands of students. They use them from childhood and quickly adapt their lifestyle to them. Students seek to choose an educational program, form of study, educational institution, country, educational community in the best way reflecting their requirements, opportunities and ambitions. At the moment, we are witnessing a change in the paradigm of education, in which the education supply market is replaced by the demand market.

Therefore, to maintain competitiveness, educational institutions and educational approaches must also quickly respond to dynamically changing environmental conditions.

The subjectivity of the personality comes to the fore and dictates the conditions for the formation of the education market, of course, increasing its quality and adaptability to the realities of life. In modern pedagogical science, subjectivity has a number of fundamentally different meanings. (Gusakova, 2015). But for the transition to a new paradigm, it is necessary to define the very concept of “subjectivity” in the educational system. According to L. S. Vygotsky, subjectivity is manifested in the activity of the individual (Vygotskiy, 1999).

Kapterev (1982) believed that the subject of the educational process is a person like-minded with the teacher. Brushlinskiy (2003) believed that “the subject is the highest systemic value of the essence of man, the totality of his fundamental properties and abilities to turn his own life into the subject of practical transformation” (p. 11-12). Slobodchikov (1995) determined that the development of subjectivity is initially carried out in socially defined forms of activity through the mechanisms of imitation and reflection, where their interaction leads to the fact that the results of imitation (involuntary imitation of the actions of another individual) - as a way of external attitude and perception of social norms - turn into relationships on the ideal plane of thinking of the individual (Slobodchikov, 1995).

Therefore, the main conditions for the development of subjectivity is the experience acquired by the individual in the process of life. Subjective experience, in the opinion of I. S. Yakimanskaya (2000), is the experience of experienced and being experienced behavior in which a person himself can give an account of his abilities; where he knows the rules of organizing his own actions and his own attitude; where significant values are fixed for him and there is a certain hierarchy of preferences about which he is able to realize what he needs and what he wants. In our opinion, the content of subjectivity must be considered in the aggregate of all components.

The analysis of scientific research has shown that the phenomenon of subjectivity has passed a difficult path of formation and development from the moment of its inception to the moment of recognition of its official status. And in the context of modern trends in education, he found practical implementation in the form of a system of formation of the subjectivity of the student (Figure 03).

The formation of subjectivity occurs through a multi-component and multi-level choice of a student. Each stage of the ladder of competencies carries with it the student’s request for himself and for the education system, determining the set of competencies he needs and their level. The requested level of competencies forms the semantic content of education, passing through the given forms of training.

DEVELOPMENT OF SUBJECTIVITY through formation of competencies

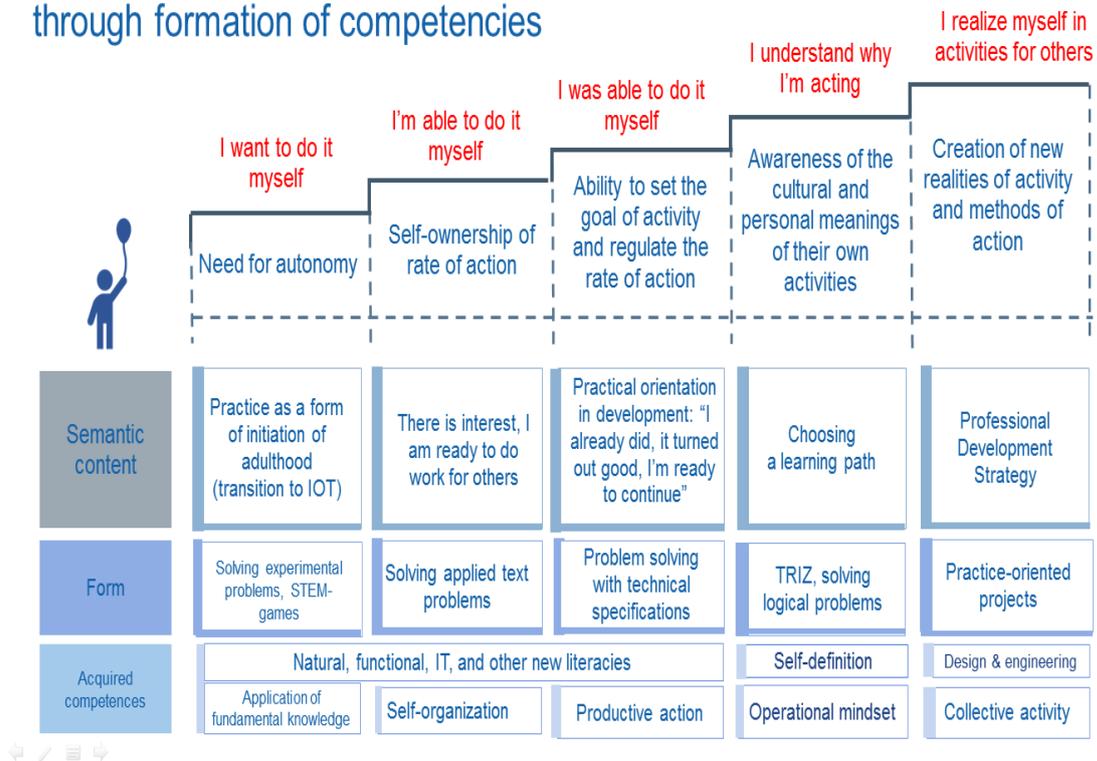


Figure 3. The formation of subjectivity of the student

When choosing a particular format, it is important to rely on the essential features that this format can provide for preparing a student for the profession of the future:

- subjective interaction of all participants in the educational process,
- openness and ability to work in a team,
- mindfulness, creativity and systematic thinking,
- unity of purpose and algorithm of activity, the interconnection of goals, objectives, means and results,
- reflection of all participants in the educational process over the results.

6.4. Unique career and individual educational paths (individualization of education)

Changes affecting all spheres of society's life in the educational process make it difficult and hard to predict the set of competencies that a graduate must have in order to be in demand on the labor market. The traditional model of education in the form of an "educational pipe" does not allow to realize the principle of subjectivity of the student. But modern challenges tell us that at the center of education should be a "Personality", capable of independently entering into dialogue with the subject, possessing critical thinking, freedom of choice, etc. Therefore, initially it is necessary to change the approach to the education system, where there is a choice of free education formats. It should be directly related to the field of activity.

For technical and engineering areas, in our opinion, the format of the "nuclear program" is most acceptable; for humanitarian - the format of the "open educational plan" and the system of distribution requirements; for "creative" areas - a system of distribution requirements. World experience in implementing these formats of education has proven their success both at the level of higher and secondary vocational education, and at the level of general education (Baruch, 2004; Dudin et al., 2018). A transition from rigid professional standards to flexible educational programs in the format of modular intensives is necessary. In this case, the stakeholder can set requirements for the program, form and conduct training courses (including online and distant), training practices and excursions, work with a collaboration with an educational institution on real projects, providing technology, equipment, tutors. The use of online forms of interaction will allow stakeholders to interest students in choosing the courses necessary for their future work, and for teachers to update educational modules and the focus of research, taking into account the demands of employers and the challenges of the knowledge economy (Fikhtner, 2019). A student in this educational model is gaining those modules that are necessary to obtain his chosen competencies. The difference in the level of students' knowledge and their expectations from the training course can be offset by the modular and multilevel programs. Leading universities and colleges in the world are successfully using this practice.

Switching to an open curriculum is very risky, but not absurd. 50 years of experience at Brown University or Amherst College (USA) and other educational organizations in the world show us the advantages of progressivism, its compliance with the requirements of both the labor market and modern students. An open educational program allows students to be "architects of their education", to study in an active intellectual environment, to be fully engaged in the study of independently chosen courses. Open curriculum solves the problem of motivation for learning, encourages them to think creatively and critically, and develop innovative solutions. These are highly demanded by business skills. In addition, open curriculum motivates teachers

- improve the quality of their courses;
- to be competitive outside their educational institution (which is especially important in the context of the globalization of education);
- allows to adapt courses to new developments in various fields of science, business needs and the developing interests of students.

However, in the face of a decline in the quality of education, as an invariable consequence of mass character, progressive infantilism, problems of increasing complexity of disciplines, weak motivation of the majority of students and inertia of teachers, it is impossible to radically change without large financial and personnel losses the traditional Russian model of the education system- the educational pipe, which has developed over decades and has become familiar to all participants in the process.

6.5. Interdisciplinarity

At present, the world community is increasing awareness of the importance of interdisciplinary relations in the process of training specialists, the need to ensure the interdisciplinary nature of teaching disciplines of all blocks (humanitarian, natural sciences, professional, subject) to improve the quality of

professional education (Hendrickson, 2001; Kizuk, 2017; Reddy & Satyanarayana, 1994; Wodi, 2012). This approach to the integration of curricula creates an understanding of topics and ideas that permeate various disciplines and the relationships between them, as well as their attitude to the real world. It usually emphasizes process and meaning, rather than product and content, combining content, theory, methodology, and perspective from two or more disciplines (GEQAF, 2012).

The knowledge and skills acquired in the study of separate subjects are only the initial elements with which, in practice, relatively simple problems can be solved. General professional and special disciplines are inherently heterogeneous. This heterogeneity cannot be qualitatively provided by separate loosely coupled disciplines. Currently, this situation is often observed in technical universities. To ensure integrativity in the implementation of the educational program, there should be not just a set of disciplines, but a system of interconnected and complementary disciplines. It is generally recognized that integrative processes lead to the discovery of new disciplines at the junction of different fields of knowledge, without which new technologies that the market requires are unthinkable. The best way to integrate with the existing educational pipe can be cross-disciplinary educational courses, interdisciplinary research and projects. This practice is implemented by many foreign universities and colleges and some Russian ones. The leading universities of the world, creating interdisciplinary research and teaching centers, place special emphasis on interdisciplinary research, scientific research, and the development of international projects in the field of various sciences. Thus, support is provided for regional research and the formation of sustainable ties with world scientific centers, the promotion of scientific results and their practical application. There are such collaborations in Russia, e.g. Interdisciplinary Research Center Poncelet, Interdisciplinary Research Center Mathematical Modeling in Biomedicine, RUDN University, HSE Centre for Interdisciplinary Basic Research.

7. Conclusion

The need for transformation of education systems has matured throughout the world. This is facilitated not only by the active use of information technology, the academic mobility of teachers and students, but also by a shift in the goals of education: from knowledge to competency. Taking into account the above-mentioned trends in the development of the educational system of the Russian Federation and the laws governing the development of world civilization, we can state that as a result of modernization of modern education, all participants in the educational process benefit:

- for the state - a workforce that has all the competencies necessary for the digital economy; citizens with an active lifestyle, ready for changes in adapting to them throughout life;
- for educational institutions - effective collaboration with business, socio-cultural and other organizations to increase their attractiveness in the education market and increase the demand for their services;
- for external stakeholders - trained personnel of the required qualification “without completion of studies” and joint research developments even at the stage of the educational process;
- for teachers - updating training courses; fundamental and applied research developments demanded by business and world science, competitiveness in the global market of educational services as a teacher, expert, tutor;

- for students - the choice of an individual career path according to an individual educational program; mastering skills for the professions of the future; competitiveness in the global labor market.

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