Academic Mobility of Polytechnic Education in the Aspect of Internationalization and Globalization

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Abstract. The subject of the research is academic mobility, including mobility of students, teachers, researchers and educational programs. The academic mobility of Polytechnic education is considered in the context of two other objective processes in the world education system – globalization and internationalization. The main purpose of the research is to analyze the meaning of the concept of academic mobility, types of mobility, the importance of mobility for Polytechnic education, the main problems caused by academic mobility and ways to solve them. The development of the education system in the world in recent decades has been revolutionary; the inherent processes that characterize this development are the internationalization and globalization of education. As a result of these processes, there is not only unification, convergence and integration of educational systems, but also the emergence of international standards for the quality of education, increasing interest in foreign students and demand for international educational programs. Academic mobility has become an essential feature of modern education. This term characterizes not only the ability of students to receive education in different parts of the world educational space, but also the personal quality, formed in the learning process, necessary for further personal and professional growth of the future specialist, reflecting its ability to live, adapt and develop in the multicultural world. Prospects for the continuation of this research are in the field of considering the possibilities and expanding cross-border networking and cooperation of world universities.

1. Introduction
One of the main trends in the world system of Polytechnic education is globalization and internationalization. They are close concepts, but each of them has its own essence. Internationalization is an objective process in the world system of education, stable interaction and mutual influence of national educational systems on the basis of harmonization of the goals and principles of education that meets the needs and progressive trends of the world community [1]. Globalization in education is the international integration of educational systems due to their mutual rapprochement, complementarity and interdependence [2]. Higher Polytechnic education in the process of globalization, can participate in the formation of national, regional and global strategies for the creation of the services sector [3]. The processes of internationalization and globalization of Polytechnic education are interrelated, but not identical.

One of the elements and indicators of the processes of globalization and internationalization of Polytechnic education—mobility of students and teachers or academic mobility – is the right and the real opportunity of students to receive education in different parts of the world in accordance with their
own interests and needs, as well as depending on the opportunities of education in the homeland and of the needs of the economy and social sphere of their countries in the personnel of a certain profile [4].

In the aspect of the development of mobility of Polytechnic education the following questions are particularly important, to which the authors try to answer in this article:

1. «What types of mobility of Polytechnic education should be emphasized?».
2. «What problems may arise in Polytechnic education due to the increase of its academic mobility?».
3. «How to neutralize the negative attention of factors accompanying the development of academic mobility of Polytechnic education?».

2. Materials and methods
The open data of the official websites of the academic register of world universities and education sites, articles from the Scopus database and the scientific electronic library – Cyberleninka – are used as initial information.

Questions of internationalization and globalization in the world education system, their interrelation and features are considered in the works of P. Altbach, T.L. Friedman, J. Knight, F. Maringe and other authors. They analyze the diversity of the concepts of «internationalization of education» and «globalization of education», shows that the subjects of these processes are students, teachers, researchers.

The features of internationalization and globalization in Russia is reflected in the work of E.E. Buhteevoy, T.N. Gur'yanovoy, A.P. Liferova, D.B., Sviridenko and other authors. They reflect the facts that Russia later then many leading world powers embarked on the path of internationalization and globalization of education, realized the objectivity and importance of these processes; however, the Russian Polytechnic education has accumulated great potential and Russia has good prospects in this way.

The issues of academic mobility are considered in the works of researchers such as D. Abdullah, M. Burman, A. Power and other authors. They show that mobility is one of the most important conditions for the development of a full-fledged specialist living in today's rapidly changing world.

The research methodology is based on the analysis of the world education system development logic. Classification, content analysis and comparative analysis, methods of ascent from abstract to concrete, abstraction and idealization, hermeneutics, method of expert evaluations are used.

3. Internationalization and globalization of Polytechnic education
Jane Knight understands internationalization as «The process of integrating the international, intercultural and global dimension into the functions of the education institution, such as teaching, research and service delivery…», with the aim of improving the quality of education and research for all its participants, as well as making a significant public contribution [5]. This definition has become a classic in the theory of internationalization of education.

The internationalization of Polytechnic education ranges from teaching abroad programs that allow students to learn other cultures to providing access to higher education in countries where local universities fail to meet the needs of the labour market.

There are internal and external internationalization [6]. Internal internationalization is the creation of a culture and climate within an institution that promotes and supports international and intercultural understanding. At the same time, the implementation of all programs, projects, research contains an international dimension. The integral component of internal internationalization – internationalization of curricula and programs – enrichment of the content of educational programs by adding international blocks of information, the use of foreign educational resources. External internationalization is the process of cross-border provision of educational products and services to foreign countries. External internationalization stimulates domestic development and Vice versa.
Internationalization should not be an end in itself. Improving the quality of Polytechnic education and research should be high priorities for internationalization.

In the Russian philosophy of education, A. Liferov [7], defines global education as one of the directions of development of modern theory and practice, based on the need to prepare a person for life in a rapidly changing and increasingly interconnected world, growing global problems and crises. Globalization forms humanity as a whole, a fundamentally new global system, all structural elements of which are interconnected and interdependent [8].

Education through globalization has taken the leading place in public policy, not only in the cultural and social spheres, but also in the economic sphere [9]. Globalization is a complex of economic, political and social incentives, forcing the education system to participate more in international processes, greater international involvement [10]. Here, globalization is a harbinger of internationalization.

From another point of view, globalization is one way to align the world [11], developing cooperation, facilitating interaction; it is to ensure equal opportunities for all, cultural exchange and overcoming differences; globalization is a further step in the development of internationalization. Internationalization, on the one hand, is a natural response to globalization, and on the other – a «proactive tool for the modernization of higher education to exist in conditions of even greater globalization» [12]. According to M. Van der Wende, internationalization is any systematic, sustained effort to make education responsive to the demands and challenges of globalization [13].

Under the influence of global processes, national higher education systems become more integrated, and as result of internationalization – more interconnected [14].

Thus, globalization and internationalization of higher Polytechnic education is an objective, inevitable processes that are not identical, but complement each other.

4. Mobility in Polytechnic education

One of the elements and indicators of globalization and internationalization of education is the mobility of students and teachers or academic mobility; it is a quantitative indicator that is easy to measure. It is divided into inbound (inbound) and outbound (outbound) mobility. Sometimes the concept of «internal mobility» is also used – the ability of students to obtain knowledge in different educational institutions of their own country.

Academic mobility is an inherent, intrinsic form of existence of the intellectual potential, reflecting the implementation of the internal needs of the potential change in motion relative to space-cultural, social, economic, and political relations [15]. It is expressed not only in the free movement of students across borders, but also in the ability and readiness for continuous self-education, self-development.

Academic mobility is one of the tools to improve the quality of education. The isolation of the educational system on its own in modern conditions is disastrous for it. The academic exchanges should be the means of development and renovation of Polytechnic education.

Academic mobility is not only a cross-border movement of students and teachers, but also an opportunity for students to shape their own educational trajectory, to choose subjects, courses in accordance with their aptitude and aspirations.

There are four main types of teacher mobility [16]:
1) Travel, exchange of professional experience, international conferences;
2) Grants, membership in the research societies;
3) Undetermined/Non-guaranteed employment; short-term work in the host country University under a contract;
4) Certain/Guaranteed employment – work with the University of the host country under a permanent employment contract; the period of stay is clearly specified.

Forms of academic mobility of students:
– Joint double degree programs;
– Training included in the framework of interuniversity cooperation;
– Educational and research practice and internships;
– Summer and language schools;
– Joint research and development;
– Seminars, conferences, scientific and technical exhibition activities;
– International competitions of student works, Olympiads.

In Polytechnic education, it is necessary to place special emphasis on such forms of mobility of teachers as grants, membership in research societies, international conferences, and for students-the included training within the framework of interuniversity cooperation, as well as educational practices, internships and international competitions of student works, Olympiads.

5. Suggestions

Academic mobility is an objective process and the result of the processes of globalization and internalization taking place in the global Polytechnic education. However, this process, like the world system of Polytechnic education itself, depends on a variety of economic and geopolitical factors, reflect the peculiarities of the development of society.

The main problems of mobility of Polytechnic education:
– insufficient information support for mobility;
– specific nature of the Russian Polytechnic system of higher education;
– insufficient financing of the mobility period, which does not allow to live and study in a foreign country;
– knowledge of foreign languages does not correspond to the minimum level at which it is possible to study, interact with students and teachers and social adaptation in the host country;
– the discrepancy of the periods of mobility with the structure of the curriculums;
– lack of international accreditation of basic programs of Polytechnic education;
– non-recognition of diplomas and programs of many universities abroad;
– discrepancy or not full compliance of the direction of preparation abroad of the chosen speciality of Polytechnic education;
– poor development of the student's research position;
– heterogeneity of national systems of Polytechnic education;
– the asymmetric nature of academic mobility in many countries; the shares of outgoing and incoming mobility differ significantly;
– difficulties of adaptation of foreign students and teachers abroad.

The solution of these problems is recommended to be carried out at the normative-legal, methodological and organizational-technological levels.

Ways of solving the problems of mobility of Polytechnic education:
– ensuring information transparency of Polytechnic education and equal opportunities for mobility for students from different countries; creation of an information network, monitoring system and feedback in the management of academic mobility programs;
– formation of the marketing system of the world market of educational services;
– the organization of accelerated language courses for foreign students; the introduction of forms and methods of teaching foreign languages, providing an increase in the level of language training of students and teachers;
– creation of understandable and comparable degrees, through the use of a full set of tools to accelerate recognition of this degrees; introduction of the system of comparability of diplomas of Polytechnic education in universities;
– consideration of new methodologies for assessing the quality of Polytechnic education and the criteria for its evaluation; introduction of the system of quality management in higher education on the basis of international standards;
– development of culture and practice of formation of flexible educational trajectories, mechanisms of recognition of disciplines and periods in other universities, including foreign ones;
strengthening the intercultural component of Polytechnic education, the development of the foundations of integrative thinking in students;

- adoption of a system of three-level cycle of Polytechnic education and uniform qualification framework, establishment of a system of credits for accumulation;

- improvement of organizational mechanisms and internal regulatory and methodological support of academic mobility;

- active financing of mobility through loans and grants; formation of a flexible system of material support of mobility;

- speeding up the process of issuing visas and work permits;

- the development of infrastructure to support mobility; the availability of social security for foreign students and other benefits; the creation of infrastructure for the adaptation of foreign students, development of the system of consultations and support for foreign students;

- development of interuniversity cooperation in educational and scientific spheres, intensification of development of joint educational and research programs of Polytechnic education;

- development of distance learning forms of foreign students as the most economically feasible in addition to traditional;

- encouraging the participation of students and teachers in mobility programmes of Polytechnic education;

- improving safety and comfort for foreign participants in mobility programmes.

6. Conclusion

The modern labor market is interested in graduates whose human capital is measured by the presence of a graduate, in addition to a diploma, a wide range of personal qualities, skills and competencies, which include flexible thinking, ability to solve problems in high social dynamics; integration of foreign languages; tolerance, multiculturalism; personal mobility; skills of cooperation in a multinational team, etc. These qualities are successfully formed in the individual with the active inclusion in the processes of academic mobility.

The tasks set before the system of Russian higher education in the field of academic mobility are formulated in the state program of the Russian Federation "development of education" for 2013-2020, adopted on 11.10.2012 at the meeting of the Government of the Russian Federation.

Measures taken at the level of individual countries and regions to achieve greater comparability of systems of higher Polytechnic education, the introduction of unified mechanisms of quality assessment, facilitation of mobility and recognition of qualifications do not eliminate, but rather strengthen competition between exporting countries of educational services, which will further be further exacerbated by the arrival and consolidation of new participants in the world market of educational services, aggressive and using modern technologies of knowledge transfer.

Therefore, the development of academic mobility of Polytechnic education is the most important task, the solution of which should be made not on an intuitive basis, but taking into account all the features and recommendations set out in this article.

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