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Academic mobility of students as a key factor for professional competences development of future engineers

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One of the most urgent issues all over the educational world is mutual recognition of academic degrees and international cooperation in quality management. The main focus is given to professional mobility. Over the recent ten years among the major tasks of Bologna reforms European academic society has considered the development of students', professors' and administrative staff academic mobility. It is commonly known that two levels of training, ECTS system of credits, etc. have been introduced to achieve these goals in the counties-Bologna declaration participants.

The aim of academic mobility programs' development is improvement of education quality, amelioration of mutual understanding between different peoples and cultures, education of new generation, prepared to live and work in the international information society.

The key factor for the international cooperation in the majority of advanced Russian engineering institutions of higher education is development of academic mobility, understood as "transfer of a person somehow engaged in the educational process to another educational institution (in the home country or abroad) for a definite period of time (usually up to one year) to study, teach or research" [4]. There are mainly two types of academic mobility distinguished: inner and international (studies and internship at international universities and other educational institutions). The level of development of academic mobility at an institution of higher education and in general in the national educational system is in fact one of the main indicators showing the quality of education at a definite university and in the whole system of professional education.

Development of academic mobility for students, professors and administrative staff became especially important after the principles of the Bologna process have been accepted. The goal is integration into European and international educational environment. The Bologna documentation always includes postulates concerning the importance of academic mobility. "Magna Charta Universitatum» states: "as in the earliest years of their history, they [universities] encourage mobility among teachers and students…" This principle was developed in the Sorbonne Joint Declaration signed by the four Ministers in charge for France, Germany, Italy and the United Kingdom (Sorbonne, 1998): «An open European area for higher learning carries a wealth of positive perspectives, of course respecting our diversities, but requires on the other hand continuous efforts to remove barriers and to develop a framework for teaching and learning, which would enhance mobility and an ever closer cooperation". It also emphasizes that "At both undergraduate and graduate level, students would be encouraged to spend at least one semester in universities outside their own country. At the same time, more teaching and research staff should be working in European countries other than their own" [3].

The Bologna Declaration puts the following tasks: "Promotion of mobility by overcoming obstacles to the effective exercise of free movement with particular attention to:

- for students, access to study and training opportunities and to related services
- for teachers, researchers and administrative staff, recognition and valorisation of periods spent in a European context researching, teaching and training, without prejudicing their statutory rights".

Academic mobility is a possibility for students, postgraduate students and young scientists to continue education and to acquire academic experience abroad by means of participation in short-term educational and research program. Academic mobility is one of the priority directions of international activity of all foreign and during the last years of Russian institutions of higher education.

Statistical data analysis gives discloses the following trends in Russia:

- "organized" mobility among students (within the framework of interstate agreements and institutional partnership programs, including joint educational programs) is much less developed than "independent" students' mobility;
- the geography of academic mobility is rather specific. If we compare the date concerning international students who come to study in Russia and Russian students who go to study abroad, it becomes evident that the major part of international students come from Asian countries and the former Soviet Union (nowadays the Commonwealth of Independent States) while Russian citizens are eager to go to Europe and North America. This fact can be easily explained by the following: the quality of education, national educational policy aimed at attracting international students, higher living standards, better employment possibilities both in Russia and abroad for young professionals who have European or US degree certificates;
- there is an evident disproportion between big universities situated in Moscow and large cities and other educational institutions in Russia. The first group comprises no more than 5% of all Russian institutions of higher education with about 20% of students. Their participation in academic mobility is much higher: approximately half of the Russian students sent to study abroad are from these main universities; and they also accept around 50% of international students.

University administration is sure that international projects, cooperation, partnership and mobility programs greatly contribute the increase if graduates' competiveness: they master foreign languages, can work in various companies, continue their education and acquire PhDs in western universities. Academic mobility programs form a growing-point for a university. Such programs change all the university activity and life: infrastructure, library, rules and regulations, etc. Academic mobility programs promote upgrading qualification of higher-education teaching personnel and administrative staff, modernization of research procedures and management patterns.

The necessity to develop academic mobility is determined by innovative nature of modern industry, intrinsic demand for diversification of education and educational services market development. Academic mobility is subject not only to Bologna process documentation, but also to the aligned international acts, migration and educational regulations, interuniversity agreements. For example the Kazan National Research Technological University has its own Development plan according to which the university sets up contacts to perform international educational Bachelor and Master degree programs. Conclusion of contracts with partner universities abroad plays an important role in this process. Nowadays a set of educational programs with international participation has been developed: "Chemical and physical modification of high molecular weight compounds", "Physical and chemical fundamentals of permolecular organized systems innovative technologies", "Biological nanotechnology", "Nanostructurized natural and synthetic materials", "Information management systems and technologies", "Gas chemical polymer processing technologies", "Energy-saving and resource-recovery technologies of water treatment and sewage purification", "Multi-component systems of petrochemical

engineering", "Manufacturing logistics", "Technology of nanomodified inorganic composite materials and coverings", etc. Bachelor and Master training will be based on project pragmatist approach with the use of joint aligned programs, shortened study, innovative educational technologies and individual educational plans [5].

A.L.Demchuk and colleagues metaphorically says that Catholic educational philosophy (sermon, message – lecture, counseling – seminar, confession – examination, source of knowledge – word) with maximal in-class learning time, is substituted by Protestant educational philosophy with minimal classroom training and much more self-guided learning and written works with the possibility to use any sources and references [1].

Academic mobility is accompanied by a number of problems associated with its realization such as: development and implementation of individual educational trajectories, creation and development of joint educational programs of several institutions of higher education, sources and mechanisms of financing, status, rules of distribution and recognition of documents, language of teaching and academic communication. The last position is the knowledge of a foreign language and even several foreign languages. Unfortunately it is the weakest link for the majority of Russian students.

According to analysis the leading Russian Universities possess real potential for creating a corporate system for inner and international academic mobility, including joint international innovative educational programs. In the European Union partnership educational programs "Tempus" and "Erasmus Mundus" have been successfully implemented for more than two decades. These programs make it possible for Masters and postgraduates to choose appropriate educational trajectories and to perform individual mobility. A lot of joint educational programs suggest distant learning mode: as a rule, international professors either work with Russian students via Internet, or come to Russia for some short time period.

Constantly growing space for implementation of joint educational programs between Russian universities and international partners gives an edge to the problem of developing regulatory and legal framework answering the European Norms. For instance nostrification of international Bachelor degree in Russian educational environment may give Russian Universities a wonderful possibility to expand their horizons. Development of the system of quality revalidation also becomes very currently important. Programs that agree with European definition of double degree programs assume generating quality system common for the partner-universities. Active cooperation of Russian universities and their international partners may facilitate implementation of joint educational programs at lower cost and with fewer problems. Modern universities need to pay special attention to arrangement of conditions for students' and professors' mobility, stimulate them to do this and organize effective partnership on various levels. Besides for students the possibility to live and study in a different environment, communicate with people from different countries, speak, express views, make presentations and discuss issues in a foreign language develops tolerance, self-confidence and respect for people and cultures.

In this context language studies and mastering second language on high professional level becomes very important for Bachelors, Masters and professors. It will facilitate not only the process of sending Russian students to study abroad, but also to admit international students to Russian universities. By second language we mean not only English (the main working language for the majority of educational programs), but also languages of the countries where students or teachers go. However linguistic knowledge and skills are unfortunately the weakest point for the greater part of Russian engineering students.

Additional to higer professional education (Russian equivalent of minor courses) suggests a good variant to solve the language problem. Faculties and Departments of additional education at the universities give the student possibilities to study English and other languages in depth simultaneously with the basic language course studied in the major. There is a variety of additional educational courses that attracts more and more students. For instance, the Faculty of Additional Education (FAE) of the Kazan National Research Technological University suggests a minor program “Professional translation (English)”. During a period of almost twenty years a group of professionals have been teaching students basing on the developed curriculum, syllabus and linguistic theoretical and practical courses.

A long experience of educating engineers-translators at the FAE gives the opportunity to think over and analyze the efficiency of the program. Following the conception of continuous education the English-Russian translation course at the FAE is divided into three stages: basic module of language studies, tree-year module “Translation” and one-year module “Professional translation”.

The three-year module includes a big amount of in-class and independent studies. Language training of future translators is carried out simultaneously with their engineering major and includes the following disciplines: “Translation and interpretation studies”, “Introduction to linguistics”, “Translation theory”, “Regional geography”, “English lexicology”, “History of English”, and practical courses “English phonetics”, “English grammar”, “Speech practice”, “Translation practice”, “Listening comprehension”, “Business English”. At the end of the module students pass final interdisciplinary examination and get Diploma of additional to higher education in translation (English).

The next one-year module is the last stage of additional language training of future engineers and includes the following disciplines: “Professional translation theory”, “Intercultural communication”, “Socio-psychological competence of interpreters”, practical courses “Professional translation practice”, English stylistics”, “Lexical peculiarities of professional translation and interpretation”, etc. At the end the students defend graduation paper on the theoretical and practical issues with translation analysis and comment as an annex.

The goal of such graduation work is to systematize, solidify and broaden theoretical knowledge, linguistic research skills progression in the given topic, defining the area of definite application of the findings. The section «Translator's comment” is the closest to the real scientific research. It shows how graduates use their theoretical knowledge and practical skills to solve the real translation tasks and make a linguistic analysis. The graduation paper may be presented as a theoretical-and-applied work, as a creative lexicographical work, or as a procedural analysis with usage tips for professional translation.

Practically all the educational courses for students getting additional to higher education in translation at the FAE are aimed at translation and interpretation skills progression taking into account the engineering major. This fact affects the content of theoretical and practical translation courses. Research-and-technical translation for engineering students and specialized translation for economics students play a significant role in the educational process at the FAE.

It is evident that theoretical material by itself cannot fully disclose the peculiarities of translation and interpretation and train practical application of the acquired knowledge.

Therefore teachers introduce a lot of practical exercises even at the lectures. This helps to internalize theory easily and to solidify it in practice. Later on this materials given at the lectures is repeated and trained at translation practicums.

Learning any second language has not only applied (communicational), but also educational goal, personal and cultural development of a student. Second language acquisition deals with speaking, reading, listening comprehension, writing and translation. All there skills are developed at the language practicums. Having graduated from the course the students are able to read, footnote, review and translate original texts in English, have consequential monologue and dialogue speech skills, understand oral speech (monologue and dialogue), active use most common grammar patterns, be able to speak in public: make reports and speeches, have writing competences for written communication and publications.

Regional geography, culturological information, day-to-day realities, and other data are also included into the curriculum. It is not a question of entertaining, but an inner demand of the educational process itself. Students should master the skill of intercultural communication and cultural dialogue. To acquire the personal experience in linguocultural communication students must be put into the situations where they can use the language as an instrument of intercultural perception and cooperation. It should be noted that innovative educational technologies are widely used in the process of teaching English: role-playing games, watching and discussing movies, Power Point Presentations, Internet, Business documentation and Business communication in second language.

This approach to solve the language problem by means of additional (minor) educational programs are broad-based and may be implemented in the majority of engineering universities. Having graduated the additional educational language course the engineering university graduate acquires all the necessary knowledge and competences that he/she may use as a professional translator or interpreter or in his major engineering profession. The graduate may try hand at an international company, become a university teacher or continue education and development abroad. Additional to higher education opens up any of these opportunities and the young person is only to choose the way that will match his goals, ambitions and nature.

Opinion pools show that the majority of students study English not because of curiosity, but because they are sure that second language is necessary for their future job and greatly improves employment possibilities. This opinion becomes more and more common as it is necessary to take into consideration that academic mobility is closely connected with professional mobility. Besides, there is a strong tendency to drift between contiguous and sometimes even very different professions during the lifetime[2]. Professional mobility is possible if a person is able to apply his knowledge and skills acquired at the university solving tasks in allied industries and comparatively easily change activities.

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