

Innovative Components in the Educational Strategy of Training the Modern Graduates

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ABSTRACT

This article is devoted to formation of multicultural knowledge during the training of a modern engineer. New courses and innovative educational programs of Russian higher schools allow us to solve new problems of graduate adaptation to living in the multilingual community. The problem under study is important today because there is a need for bilingual teaching and learning and for forming multicultural knowledge within training the modern highly-qualified professionals, and also because of the lack of previous investigation in the aspects of pedagogical, institutional, and even personal nature that would allow solving the new tasks of adapting the graduates to the learning and working conditions in a multilingual society. This article is aimed at substantiating a theoretical model of a system of various methods to adapt foreign students to the educational environment of a Russian university and to promote the Russian students' opportunities to be educated abroad. The leading method of approaching to this problem is the method of social and pedagogical experiment that allows us to consider this problem as a process of the students' focused and conscious mastering the skills of energetically acting as a public space agent, when in the country of stay. This article presents a system of various methods to adapt foreign students to the educational environment of a Russian university and to promote the Russian students' opportunities to be educated abroad, which system consists of the interrelated elements of pedagogical, institutional, and even personal nature, their special features having been shown, and the algorithm of implementing such methods having been developed. The theoretical model presented is aimed, first of all, at promoting the Russian students' opportunities to be educated abroad, and it is focused on adapting the graduates to the learning and working conditions in a multilingual society.

KEYWORDS

Jurisprudence; bilingualism; multiculturalism; engineering education; academic mobility

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Introduction

Academic mobility is one of the promising and inevitable trends of the Russian higher school development (Dubinina, 2012). Due to globalization of work places and companies, graduates have to be prepared for professional activity related to daily international relationships, private trips and communication with remote people (Aleksandrov et al., 2015; Shageeva et al., 2016). It means that a

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level of internationalization will increase, but awarded qualifications must have international recognition (Crawley et al., 2015). These processes are based on international legal framework (Bukalerova & Shagieva, 2013; Masalimova & Ivanov, 2016). Salamanca Declaration of EUA (Salamanca, Spain, 29-30 March 2001) claims that free mobility of students, staff and graduates is a requirement of existing European zone of Higher Education. European universities want to develop horizontal mobility as well as vertical one. They do not consider virtual mobility as a replacement of physical mobility.

Understanding this fact is present even in Russian education: international cooperation is an important indicator for development programs of federal and national research universities, as well as universities, which entered the program "Top 100 Universities". One of state policy principles in the sphere of education is to create enabling environments for the integration of the educational system of the Russian Federation with the education systems of other countries on an equal and mutually beneficial basis.

Bilingualism and multiculturalism have great value in the field of international education. Students seek to get full education abroad. It leads to development of scientific and cultural exchanges and to intensification of academic exchange (Gorodetskaya et al., 2015).

Many universities expand opportunities for gaining access to foreign education. They take part in international cooperation. Higher educational institutions conclude contracts with international organizations and citizens in such areas as the development and implementation of joint educational and research programs with international or foreign organizations, the organization of academic exchanges and joint research and educational activities; participation in networking implementation form of educational programs, exchange of academic literature, etc. They train students using foreign languages (Barabanova, 2015).

Materials and methods

Research Methods

In this research, the following methods were used: Theoretical methods, such as analysis, synthesis, specification, generalization, analog method, and modeling; diagnostic techniques, such as questionnaire surveys, interviewing, and testing; empirical methods, such as studying the practices of educational institutions, viewing various regulatory and academic documents, and lesson observation; and experimental methods, such as ascertaining experiment.

Experimental Facilities

The experimental facility for this research became the Kazan National Research Technological University and the Financial University under the Government of the Russian Federation. 3 groups of the KNRTU students (54 people), 1 groups of the Financial University students (30 people), 2 groups of the KNRTU faculty members learning a foreign language (20 people), 2 Financial University's teachers and 15 KNRTU faculty members that teach a foreign language or in a foreign language took part in the experiment.

Research Stages

The problem was investigated in three stages:

At the first stage, we performed the theoretical analysis of the existing methodological approaches in philosophic, psychological, juridical and educational literature, theses on the problem, as well as the theory and methods of educational research; we also defined the problem, the goal, and the methods of this research, and made up a plan of our experimental studies.

At the second stage, we were developing the model of forming the monitoring and bilingual skills of the teaching personnel; defining and substantiating a set of educational conditions for the efficient forming the monitoring skills of teaching personnel; carrying out the experimental work, analyzing, validating, and adjusting the conclusions made in the course of our experimental activities.

At the third stage, we completed our experiments, adjusted the practical and theoretical conclusions, generalized and systematized the results obtained.

Results

The main barriers to academic mobility of foreign and Russian students are the cultural, socio-economic, psychological, legal, and didactic difficulties. As a rule, students do not usually know the features of the educational system, legal acts, cultural and historical traditions. Getting education in one of the European countries, the Russian students enter the developed communities organized on legal basis, that are called Law States where the majority of arising life problems are being solved by means of legal mechanisms (Grudtsyna, Nikonova & Shagiyaeva, 2016). Ignorance of legal system bases of the host country is fraught with serious conflicts with students' participation in private life, as well as in public one. It is important to keep in mind that it is related to young people that are ready for active political and legal life. Being found in the host country a student can act as a person of the public space because of a formed mental set. This presupposes preliminary legal training in Russia. Only those, who will manage to overcome traditional homeland rule skepticism, will be able to adapt in the country where they will continue their higher education.

A language of study often turns out to be insurmountable obstacle. The need for a common language of international education is still bringing the English language to this role. Training foreign students in the language of the host country is encouraged. This particularly applies to studying natural sciences within the system of higher education.

Academic mobility of students necessitate mastering the English language or the language of the hosting country by the Russian students in their studying various subjects, including liberal arts. In one form or another, both international educational programs and bilingualism-based training are implemented in many universities/colleges in Russia. Kazan National Research Technological University is no exception.

Experience of authors' participation in implementation of such programs allows them to make some conclusions about the major problems of organization of an innovative education process with use of foreign language and offer their recommendations for purposes of its optimization. The author's course of comparative jurisprudence for engineering students became a result of scientific interpretation. Its implementation allows them to form necessary academic skills and enriches the methodology of a pedagogical process by an interdisciplinary approach.

The experience of one of the authors of this article in implementing the bachelor-of-technology-level program in area 240100 Chemical Engineering with the focus on the Chemical Engineering of Natural Energy Supplies and Carbon-Based Materials to be taught in English, as well as that of the other authors in a similar bachelor-level program in other areas in the Financial University under the Government of the Russian Federation, allow us to draw some conclusions regarding the core problems in organizing an innovative educational process of this kind and to propose our own recommendations regarding optimization of the same. The scientific interpretation thereof resulted in developing an experimental course of comparative legal studies for non-legal students proposed to be introduced to the actual practice to develop in students the necessary competencies and to enrich the teaching/studying process with interdisciplinary approaches (Barabanova et al., 2016; Kayumova & Zakirova, 2016). The students got into an absolutely different educational reality “loaded” with the doubled amount of information – that prescribed by the Federal State Education Standard (hereinafter, FSES) plus additional information on the Western legal tradition and the European law. Generally, the educational experiment turned out to be successful, which had been particularly confirmed by the high performance of students in testing for the “left-over” knowledge on the course (84%).

The whole new pedagogical challenge and return to a course called "Legal Studies Basics" at a higher level required rethinking the methodological basis of the Russian course of legal studies in accordance with the FSES and in a foreign language, as our higher institutions stated. Law is an integral part of modern society as well as machines and equipment created by labor of engineers and other technical employees. Law is a part of machines and equipment. Nothing can be sown and collected from fields and before it nothing can be designed and created at factories and plants beyond rights and obligations with labor and an exchange. Those researchers are right who consider “machines not to be manufactured, delivered from a producer to a consumer and then used, and the costs and profits of using them not to be estimated beyond definite forms of legal regulation of these processes” (Berman, 1994). Therefore, the bases of Russian Law inevitably had to include a comparative legal component with a comparison of domestic law to law and the state system of the USA and Great Britain because English was claimed to be the language of teaching.

As in the case of training under the traditional program, the students received the necessary minimum of teaching information about the state and law, Russian legal system, the Constitution of the Russian Federation, and basic codes within the framework of this discipline. However, in general, the training program differed from the conventional one. A plan of in-class lectures and practical studies is presented below. We considered this particular format as an optimal one, taking into account educational problems to be solved and the training goal set (Table 1). The self-guided work was planned for 54 hours. It was certainly important for both the professor and the student. Nobody could come to the classroom any more with a yellowed with age summaries tested in tens of groups and with customized presentations.

Table 1. Lectures and Seminars

No.	Hours	Theme
1	6	State, Law, and the Problems of Social Development

	2	Unit 1.1. General Theory of Law
	2	Unit 1.2. General Theory of State
	2	Unit 1.3. Main Modern Legal Systems
2	5	Fundamentals of Constitutional Studies
	2	Unit 2.1. Constitutional System of the Russian Federation
	1	Unit 2.2. Comparative Analysis of the American and Russian Constitutions
	2	Unit 2.3 Basics of the Legal Statuses of People and Citizens in the Modern World (roundtable discussion)
3	2	Executive Branch in the Russian Federation, the USA, and Great Britain
4	6	Civil Law of the Russian Federation, the USA, and Great Britain
	2	Unit 4.1 Citizens as Parties to Civil-Law Relations
	2	Unit 4.2 Legal Entities: Concept, Elements, and Types
	2	Unit 4.3 Contract: Concept, Elements, and Types. Procedures for Executing and Terminating Contracts
5	2	Labor Law of the Russian Federation, the USA, and Great Britain
6	2	Labor Contract. Working and Leisure Hours
7	2	Environmental Law
8	2	Personal and Property Relations of Spouses. Marriage Contract (Comparative Legal Analysis of the Relevant Legislation in Russia, the USA, and Great Britain)
Total	27	

We relied on learning the professional legal vocabulary of English-speaking countries. In particular, study guide titled *Legal Terminology of the Anglo-Saxon Law System* (Amosova, 2008) and the *English-Russian and Russian-English Law Dictionary* were used at classes and for the students' self-guided work (Batler, 2014; Andrianov, Berson & Nikiforov, 2003). Studying the legal systems of the USA and Great Britain was based on publications of Russian authors, such as A.K. Romanov (2010), V.V. Orobinsky (2015), and V.M. Shumilov (2013).

The term's results showed that the approach chosen had allowed us to solve simultaneously educational and pedagogical problems, as well as the problem of advanced training and language communication of a teacher him or herself.

Such a transformation of an academic subject highlights the need for solving pedagogical, organizational, legal and individual problems. The necessity of developing and approving local normative acts is the most important organizational challenge. They have to define a program character, objectives of its implementation, requirements to language proficiency level and academic documents, the procedure to select academic staff and students, particular features of academic load calculation and midterm assessment of students, etc. In most cases, all the decisions are still made by the main executives from office and management personnel. They are also advisory and optional.

It is surely necessary to test professors and students for their language knowledge and to organize optional foreign language classes for both categories, where possible.

Finally, the experience accumulated in teaching this subject shows that students cannot perceive information in the field of comparative jurisprudence in English without a certain level of legal knowledge in the field of Russian Law received in their native language.

Thus, for achieving the successful teaching results, the following actions would be reasonable:

- Adopting the local university instruments that would define the procedures for implementing such programs, the aspects of how the studying loads will be calculated and the interim assessments of students will be conducted, the requirements regarding the foreign language proficiency, etc.;
- Developing a testing system for assessing the language proficiency of faculty members and students;
- Organizing additional foreign language lessons for both;
- Increasing the level of the students' readiness to perceive the subject learned in the English language;
- Forming a positive mindset in the faculty members regarding teaching their students in a foreign language;
- Using by the university management the supportive measures and material/moral incentives for those program participants that, in spite of the conventional unwillingness of the most faculty members in Russian universities to master giving lectures in foreign languages, managed to overcome the language barrier and are successfully working to the benefits of the actual implementation of academic mobility.

Discussions

Considering the complexity of the latter pedagogical task, it should be recommended to the university management both to come up with a system of stimuli and incentives for the teachers and context specialists participating in implementing such programs and to provide additional organizational and methodological support.

The readiness of academic staff to provide training to their students in one subject or another in a foreign language, provided that this is not their core professional activity, unlike those teaching foreign languages, can be achieved using the means, such as conducting the relevant methodology workshops (Dubinina, 2012), assigning a tutor from the department for foreign languages, the latter provided that the tutoring functions are included into such tutor's planned teaching loads, involving into teaching an instructor or a postgraduate having the relevant language knowledge, reducing the basic academic load of the relevant lecturer, paying for the translation services for preparing the necessary teaching aids, etc.

Organization of lectures and seminars on jurisprudence in English as the continuation of the course conducted previously in Russian could become a fruitful solution for many problems being investigated. Such experience was particularly approved in the Siberian Automobile and Highway Academy (Mikhailov & Tsyguleva, 2010). Useful recommendations, as well as the aspects of similar pedagogical difficulties are given in publications by D.V Berzin (2013) and E.G. Krylov (2014).

The achievements of the KNRTU and of the Financial University under the Government of the Russian Federation in the international field were repeatedly described in multiple publications. With their active international ties and a great

number of scientific events involving international participants, the university employees' interest in learning English increased. Some teachers conduct interesting research in the problems of training future engineers in a foreign language and those of bilingual communication (Ivanov, Miftakhova & Tszayuyi, 2014). However, where it concerns implementing some specific educational tasks, teachers can only reckon on themselves. This article may provide somebody with materials necessary for developing pedagogic innovations in this area.

Conclusion

As it was written above, the implementation of similar programs requires an integrated approach to creating the multicultural environment in a higher education institution, facilitates the foreign students' adaptation to Russian universities/colleges, and provides the general education quality improvement. Taking the above into consideration, we started experimental courses: Bilingual "Jurisprudence" for petrochemistry students, "Law" for future economists and managers, and "Jurisprudence" for students in other areas of studies.

The authors propose a number of particular solutions for the problem of teaching in a foreign language considering the specifics of how education is organized in Russian universities. As it was mentioned above, for teaching staff, this could be conducting workshops, assigning a tutor or a context specialist from the department for foreign languages, involving a senior or post-graduate student having the necessary language proficiency as an assistant, reducing the basic teaching loads, paying a translator for preparing the necessary teaching and learning aids, etc. A good solution for students could be giving lectures and conducting workshops on jurisprudence in English as the continued course previously given in Russian. This would demonstrate the artificial bilingualism in teaching Russian-speaking students and ensure the creation of an adaptive language environment in order to successfully overcome the language barrier in countries where English is the language of teaching.

Internationalization of educational environment requires considering the phenomena of multilingualism and multiculturalism (Aleksandrov et al., 2016; Shageeva & Ivanov, 2013), and these are often cultural, social, economic, and psychological difficulties that are the real obstacles for the academic mobility of Russian and foreign students, not just the didactic ones. Basically, students do not know any special features of the educational system, the state structure, the system of law or the economy of the country they come to study in. Being educated in one of the European countries, the Russian students get into well-developed societies organized on a legal foundation, the so-called rule-of-law states, where the most problems in life can be solved using legal mechanisms. Ignoring the basics of the legal system existing in the country of their residence may lead to the student's legal exposure or to serious legal conflict involving the students both in their private life and in public space. Issues relating to the languages of teaching are still actual, and the need for a common language of international education brings the English language to play this role. Academic mobility means mastering English or the official language of the country of residence. Although the academic mobility of Russian students cannot be compared with the European scope, the new trends in language training and in the development of intercultural professional communications at Russian universities and colleges give some cause

for a cautious optimism and speak for the necessity and possibility of unconventional approaches to teaching and learning within the processes of globalization and international integration in education.

Within the framework of bilingual teaching other-language students, a bilingualism-based teaching technology has already been developed in our universities, using the students' native language as a learning medium in order to successfully adapt them to Russian universities. This technology considers the student's proficiency in the common vocabularies of Russian and English, as well as such student's being surrounded with his or her compatriots speaking his or her native language.

Considering the results obtained during the pedagogic observations of foreign students' learning activities and the experience of Russian educators in adapting foreign students, the authors have also developed a system of ways to be used by the first-year students to overcome the difficulties in their adaptation to the educational environment in a Russian-speaking university. In the authors' opinion, it would be reasonable to:

- Use such form of teaching as creating micro groups consisting of compatriots with their functions of studying activities separated among the students, and include a Russian-speaking student into such group;
- Master the terms and definitions used in science taking into account the students' native language, international borrowed words, and translatable and untranslatable terms;
- Use the method of integrating the experimental chemical, physical, mathematical and practical every day's skills of students on the linguistic basis; etc.

The efficiency of bilingual students' adaptation, in case of bilingualism-based teaching will grow, if the following is developed and implemented:

- Recommendations on developing the learning and teaching base;
- Procedures of psychological, pedagogical, cross-cultural, and linguistic training for faculty members that teach foreign students;
- Equipping the university libraries with books published in the students' native languages or in intermediate languages;
- Arranging the pre-graduation practices of foreign students on the enterprises in their native country;
- Expanding the social area of the foreign students' living beyond their studying processes;
- Tools for students' self-guided studies and for their self-education in order to increase their adaptation level; etc.

The possibilities considered by the authors for using the bilingualism-based teaching within a multicultural environment consisting of national and international students, as well as creating adaptive conditions for successful teaching them fine arts, correspond with the principles of the Russian higher education doctrine: For a student to become a highly-qualified professional, he or she must leave the space of knowledge for the space of activities and life purposes (Pokholkov, 2011).

Disclosure statement

No potential conflict of interest was reported by the authors.

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