

**SCIENCE AND UNIVERSITY EDUCATION:
ONE SUBJECTIVE POINT OF VIEW ABOUT FOREIGN TEACHERS****Dmytro ZUBOV, Professor, Ph.D.**

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Abstract

In this paper, some subjective points of view about the foreign teachers' influence on science and university education are shown. The overseas employees' sampled population generation is not possible to build through the set of factors, and, therefore, presented material is the authors' subjective point of view. The paper main consequences are the authors' subjective points of view which are: 1. Science and economical situation have a strict relation. Therefore, the science improvement and development is a priority social task. 2. Foreign teachers refrain from publishing their research results and from conducting fundamental scientific investigations because of: a) lack of the intellectual property protection; b) the non-stability – especially it concerns fundamental projects when the grant funds can be dissolved or/and refused to prolongate the current projects; c) the local funds often do not support the foreign specialists. 3. The world science management experience shows next main approaches to the foreign scientists' work improvement and development: a) the concrete scientists' stable granting; b) the overseas teachers must take part in domestic scientific projects for the close collaboration if possible; c) the intellectual human resources must be defended in different spheres – social, legal, financial, etc.

Keywords: science, management, university, education, foreign teachers.

Introduction

The significance of the science and university education's symbiosis is very clear in praesenti [1-14]. On one hand, talented people have the opportunity to take part in scientific projects and improve their skills. On the other hand, these projects are conducted efficiently by high-qualified researchers. Indeed, the "third side" of this collaboration is very clear – the scientific, social, and economical increase of the relevant country (e.g., USA, Japan, China). Moreover, some countries have special stimuli in the university education system for the science projects' soft integration – USA colleges will have higher rate and be called "universities" if they conduct scientific investigations. The scientific profitability is very high – about 100 % at average. It is necessary to admit that only one fifth (approximately) of the whole quantity provides this economical efficiency, and compensate other expenses. In this context, the Sweden example is very suitable [9]. Obviously, the university teachers are the basis for the science and education symbiosis. Thus, this paper's main goal is a light discussion about the foreign teachers' impact on the science and university education processes.

Foreign Teachers' Employment as a Social Process

In praesenti, question about the scientific level's improvement is very actual. We can consider it as a social process because the society determines approaches for investigations (e.g., bioinformatics [5]) generally; on the other hand, the scientific projects are oriented to maximum public benefits generally too. In a fact, the up-to-date scientific processes are international – the modern globalization's impact. Moreover, the large projects are impossible without international collaboration (e.g., the Large Hadron Collider [10]). Indeed, it has both advantages and disadvantages. On the one hand, these are the international collaboration's improvement, attraction of the new technologies and the professional skills. On the other hand, foreign teachers are kept sufficiently far to the paper publishing, and to the fundamental scientific investigations. In authors' point of view, the main reasons are:

1. The intellectual property – foreign scientists do not want to leave “know-how” in other countries.
2. The non-stability. Especially, it concerns fundamental projects when the grant funds can dissolve or/and refuse to prolongate the current projects.
3. The local funds do not support the foreign specialists often (e.g., Ukraine).

In this case, the present (or former) foreign scientists can take part in the domestic scientific level's improvement efficiently. In this context, the Russia example is very convenient – close collaboration between the Russian Speaking International Association and the Russian Federation's Science and Education Ministry ([14]; May 20-23, 2010, Berlin, Germany and June 29 – July 1, 2011, Kazan, Russia – 1st and 2nd congresses of the Russian nationals – graduates of the former Soviet Union Republics' universities and colleges). Moreover, it is necessary to admit that the domestic nationals understand the internal environment. In this context, the very good example is: the foreigners' interviews about Skolkovo innovation center on Russian Television Chanel (RT.com) in 2011 [1]. It was told that human IT-resources are free-accessible in Russia now. In authors' point of view, the human IT-potential is great, but the time is necessary for special IT-skills learning (up to 2 years with IT-fundamentals generally). Creation and effective use of knowledge in the information space of post-industrial stage of society can turn them into a source of profit to ensure sustainable economic growth. The main carrier and the creator of knowledge in this case is an employee who is capable of self-learning, getting and experiencing new knowledge in a changing world. Social and political problems in the society affect the training of highly qualified specialists adversely, which leads to a reduction of some fundamental and applied researches as well as to the "brain drain". In its turn, the result of these processes is the weakening of the state in the research rankings. Let us consider the impact of government policy and the crisis in Ukraine. Lack of research funding, lack of grants, the closeness of scientific research space, the low factual scientific potential of universities in Ukraine lead to a lack of integration in the global research process. According to Thomson Reuters [20] citation index of Ukrainian authors in the main research areas is rather low. In addition, the overseas scientists can be attracted efficiently in the education and investigations by the assimilation process (it is a discussable psychological question). It should be recognized that Ukraine universities increasingly aim to carry out joint research with European universities, which are financed by international grants, but not by the government of Ukraine.

Foreign Teachers' Efficient Integration in Science and University Education**General World Outlook**

During the last decade, one Asian country has been showing the intensive science progress – China. Two main stimuli are clear – the economics stable increase and the science high financing [2, 8]. Well-known foreign scientists earn up to 1 million dollars per year plus the grants for investigations. It is necessary to admit that the grant system dominates in the world science financing (USA, UK, Germany, etc.). In addition, China conducts program “1000 talents” which invites overseas Chinese scientists back to the country. China’s example is very typical for the developed countries – it is strict relation between economical and scientific levels. Other European example of the intensively developing science is Russia. This country also provides privileges for well-known scientists [1, 5]. Nevertheless, the grants amount is much more less than in China. Fortunately, the Russian science overseas diaspora has a great scientists’ potential, and, therefore, its applying has an intensive quality effect. In addition, Russian government builds such innovation centers as Skolkovo (an ultramodern complex near Moscow created to encourage scientifically-technological based companies) [1]. In authors’ point of view, the USA is a leader in a foreign teachers’ quantity. Statistics is very subjective – a lot of teachers are the former students in the USA from other countries (India, China, Russia, etc.). The most important advantage of the USA scientific system is the efficient management (subjectively). Another way to attract foreign teachers in the national educational process is the organization of distance learning courses with multimedia capabilities and the Internet. Many universities also have experience in distance learning courses, including those outside the principle program and the use of specialized portals (Troy University, Stanford University [15], MERLOT, WebAssign, etc.). Adapting of the material to the level of students’ preparation is necessary in most cases. In addition, the full transition to distance learning is also not possible due to the specifics of many domains and fields of science that require laboratory facilities and equipment. Remote form of specialist training can not provide the opportunities for student to receive practical training of as high quality as in academic centers and specialized facilities. An important component of research is to share the results through joint publications and free access to them. Unfortunately, many publications exist only on paper with a restricted access. On some portals restricted access occurs also due to charging for reading scientific publications. The desire of their owners to create business with help of publications is obvious, despite the fact that the information field of the Internet is free for the most part. Thus, the results of research are not available to a wide range of researchers, including young scientists. Nowadays social networks are widespread, they are focused on the creation of scientific communities (Scientific Social Community, Mendeley, SciPeople) [22, 23, 24]. These social groups are common among young scientists, in most cases. They facilitate involvement of a wide range of young people in the current scientific research. This is a much more powerful tool in comparison with the bibliographic sources, search engines and magazines. Social networking tools and blogs solve the problem of communication, transmission and knowledge dissemination in a particular area of research. Unfortunately, the scientists at the age of over 50 years are still prevalent traditional and sometimes outdated approaches to the sharing of knowledge, which, of course prevents the rejuvenation of the scientific potential. One of Thomson Reuters’ works, which is called ResearcherID, promotes the integration of scientists into the global research process. ResearcherID expressly associates each researcher with his or her published work – standardizing and clarifying the authors’ names and citations and making information searches more straightforward and relevant. Unique author identifier increases researchers’ visibility and makes their work more accessible [21].

Some Thoughts about the Intellectual Human Resources

Obviously, a personnel is a basis of any organization. Therefore, private or state services have to defend the scientific human resources. In this context, the very good example is Belorussia which was the only country that supplied the scientific organizations after the USSR's disintegration, and, hence, saved the industry on the competitive level. On the other hand, Ukraine and Russia did not battle for self scientific interests very strongly (approximately 1.5 million scientists went abroad after 1990), and, hence, they need more efforts for the intellectual human resources' development and improvement. The present state of research in Ukraine reflects the crisis of governance in education and science. Some research organizing approaches, which had existed in the Soviet Union, were not adapted to the market conditions of modern Ukraine. Unfortunately, as weak points we may name: a formal approach to research registration, selective (and often insufficient) research funding, the inability to implement many innovative projects [16, 18]. According to the Economist Intelligence Unit only about 11% of companies in Ukraine adopt innovations, whereas in the EU the number is 44%. Many unsolved problems remain in the Ukrainian educational system, which is full of archaisms such as distance higher education and the mass training of highly qualified personnel [17]. With so many universities, professions and those who are eager to study, all Ukrainian citizens at the age of 30 will have a university degree in the very near future. And more often it will be of a very poor quality. Statistics of university graduates' employment according to the specialty proves this fact. There is also an unbalanced training of highly qualified employees and a stable commercialization of education. For example, specialists in economics, law, medicine, are prepared in much larger quantities than technologists, engineers, metallurgists and technicians. In addition, despite the increasing number of candidates and doctors of science (the total number in Ukraine is about 110 thousand people), the results of scientific research have not led to economic growth and welfare of its citizens. One of the main reasons for this distortion of quantitative and qualitative indicators is the lack of qualified career guidance on the initial educational system stages. Also the educational processes are negatively affected by stereotypical thinking, which was formed by several generations. It's firmly believed that career growth is impossible without a diploma of higher education. As a result, the scientific potential of Ukraine is beginning to work on other economies, where scientific climate is more favorable. In Ukraine, unfortunately, we observe processes similar to a spiral of incompetence.

Outsourcing, Remote Research

Outsourcing is the actual organization of research and studies with good motivation, the required level of knowledge, enforcement of the formal part of the agreements. It is clear that for many subject fields, this approach is not justified and is not feasible because of the need for natural experiments involving laboratory facilities and expensive equipment. On the other hand, fundamental research in sciences, engineering, modeling, development of information systems, cloud computing, many human studies match the outsourcing approach. Thus, the urgent task is to develop formal rules of interaction between employer and employees, to settle the legal and financial relations. However, despite the attractiveness of this approach, strict limitations appear while moving serious researches in the area of high technology, strategic innovation and other closed (secret) researches. Anyway, foreign specialists' involvement is useful strategically – firstly, for present and future international collaboration in all spheres of human life. In this content, two examples are suitable – USSR invited a lot of foreign students (in praesenti, they are the great ground for international collaboration) and Macedonia (University for Information Science and Technology) invites the foreign professors and students (a great positive support for the future projects).

Conclusion and Perspective of the Forward Investigations

The overseas employees' sampled population generation is not possible to build through the set of factors. Therefore, it is necessary to admit that the article's main consequences are the authors' subjective points of view which are: 1. Science and economical situation have a strict relation. Moreover, the science profitability is very high – 100 % at average approximately. Therefore, the science branch's improvement and development is a priority social task. 2. Foreign teachers are kept sufficiently far to the paper publishing, and to the fundamental scientific investigations. The main reasons are: a) the intellectual property – foreign scientists do not want to leave “know-how” in other countries; b) the non-stability – especially it concerns fundamental projects when the grant funds can dissolve or/and refuse to prolongate the current projects. c) the local funds do not support the foreign specialists often (e.g., Ukraine). 3. The science management's world experience shows next main approaches for the foreign scientists work's improvement and development: a) the concrete scientist's stable granting; b) the overseas nationals have to take part in domestic scientific projects for the close collaboration if possible; c) the intellectual human resources' defence in different spheres – social, law, financing, etc. 4. The balanced system of selection and different skills' training must be built for the effective implementation of scientific work results in the economy and industry of the country, followed by labor motivation. 5. World science development requires the use of new tools, such as distance learning, social networking and groups, blogs, databases of research, remote research (outsourcing) that contribute to the transformation of knowledge into a source of profit for achieving sustained economic growth in post-industrial stage of society development. 6. Foreign specialists' involvement is useful strategically – firstly, for present and future international collaboration in all spheres of human life. The main perspective of the forward investigations is the statistics mining or/and collecting, and the reasonable investigations conducting – it is necessary to find formal stimuli for the foreign scientists work's improvement and development.

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