

Reproduction of Social and Professional Community of Academic Specialists Under Conditions of Economic Crisis

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Abstract — This article presents the author's study results of consequences of the economic crisis affecting the social and professional community of higher school lecturers. The study was carried out on the basis of the Urals Federal University inside official statistics data, on the research of post graduate students of the Urals Federal University of STEM-direction training, on the author's study of young lecturer's potential and on the expert interviews data. Interrelation between attractiveness of a higher school lecturer profession, researcher and the economic situation in the country was proved

Keywords — *Reproduction of social and professional community of academic specialists, economic crisis, higher education, science, young staff in science and in higher education.*

I. INTRODUCTION

Modern social and economic changes in the market contribute to the change of the higher education system and the lecturer role. In this article the author considers the economic crisis consequences affecting the social and professional community of higher school lecturers. The study was carried out on the basis of the Urals Federal University inside official statistics data, on the research of post graduate students of the Urals Federal University of STEM-direction training, on the author's study of young lecturers potential and on the expert interviews data.

II. MATERIALS AND METHODS (MODEL)

Generalization of studies on reformation of the Russian higher education system allowed us to reveal a number of factors determining the goal transformation of the academic environment. It seems to us that a three-level division of factors affecting the academic environment is the most reliable.

We relate to macrolevel factors the processes which take place on the institutional level and affect the university as an institution, its business environment and structure. They include the national higher education system integration into the world academic environment as well as formalization of education and commercialization of higher educational institutions.

We relate to mesolevel factors the transformation processes of the national higher education system due to globalization processes, also, due to the external environmental changes in the educational service market, in

particular, the change of the higher educational institution role in the regional development which leads to greater orientation toward the consumer market. This relates to direct functions of a university, i.e. labor force creation, to the commercially successful innovation and research activities and to redistribution of state and private research activities financing shares.

The third level factors are the micro-processes which take place within a specific university

Our greatest research interest is the analysis of the mesolevel factor effects within the context of the academic environment internal changes which include, in our opinion, the structural change of the research and pedagogical personnel (skilled labor force flow out of the branch, professional and teaching staff «ageing», increase in the number of lecturers with secondary occupation), transition from the information and knowledge-based paradigm of education to the problem paradigm of education (change of the lecturer's role set, tightening up the requirements to the lecturer's professional activity, mastering new methods of learning), transition from translation of knowledge to creation of knowledge (creation of science-intensive technology, work under conditions of the market economy where new knowledge is a subject of sale).

Under conditions of the environmental transformation any community undergoes changes. The most important mechanism affecting the given community is the mechanism of this community reproduction.

There are a lot of transformation factors affecting the community reproduction. Let's consider four key factors. They can be conditionally divided into two groups: demographic and research technological.

The first group includes such demographic characteristics affecting the demand for labor force in the academic environment as the natural increase and loss of the population, i.e. a decrease in the number of students which results in a decrease in the number of the professional and teaching staff as well as natural ageing of the professional and teaching staff which cause the need in young specialists in profession.

The second group includes costs required for scientific research and development and for new technology introduction for student training. This has an effect on the number of the professional and teaching staff and on the

university entrant bodies since it contributes to popularization and massification of higher education.

For the university, as for any other organization, there are two main channels of the personnel entry, namely, external and internal markets.

It occurred institutionally that the policy of the staff internal employment and selection of the best students and post graduate students are the main channels of the research and educational personnel (REP) entry and reproduction. A small source of the external employment is mainly represented by engineers, researchers or employees combining the production activity or work at research institutes with the educational activity (practice existed in the USSR, in the modern interpretation the given practice has a form of collaboration) or fully going to the teaching activity.

The mechanism of the professional community reproduction of higher school lecturers has a number of peculiarities.

The first peculiarity is laid in the principle of a classic university that is the unity of research and teaching. According to this principle, the lecturer should be a researcher (scientist) and a pedagogue (teacher). At that, combination of various roles in the professional status creates certain difficulties at this personnel reproduction. Who should a teacher be? Should he be either a researcher-scientist engaged in science and sharing his knowledge with students or professional pedagogue possessing professional training skills and engaging in the research activity?

The second peculiarity of the professional community reproduction of higher school teachers results from the first one: the university as a social institution trains professional personnel for various economic spheres, however, there is no such institution which would train professional personnel for itself.

The third peculiarity of the teacher professional community reproduction is interconnected with the second one. Institutionally laid that "the entry" to the profession is a post graduate school. However, according to provisions of new law "On Education", the post graduate school is only the third level of higher education: bachelor course, MA course, post graduate school. So, at present, the function of the professional and teaching staff reproduction is not the basic one, the post graduate school ceased to perform this function not only de jure but also de facto.

Enrolment by universities of their own graduates is a widespread practice in the academic systems. It got the name «inbreeding». It should be specially emphasized that the Russian academic market of labor has not been formed yet, it is insufficiently mobile. Apart from the officially declared rules of hiring informal relations in the professional community have a significant influence. A number of researchers believes that higher educational institutions have a stable idea about the competitive ability and high level of training of their own graduates, therefore, they, like nobody else, deserve to join this profession [1]. The given opinion is under the influence of a close link between a post graduate student, specialized department and research supervisor which form the graduate inner valuable guidelines welcomed in the given academic environment. According to

researchers, factors limiting the mobility in the academic market include: low payment for labor, geographic peculiarities of our country, bad knowledge of foreign languages shown by the most of university teachers, identification themselves not with the profession or specific branch of science but with a specific higher educational institution (place of work).

III. RESULTS AND DISCUSSION

A decrease in the number of young specialists in the branch approved by the statistics data became the main consequence of the economic crisis for research and educational personnel reproduction. On the whole, the professional community of high school teachers decreased by 31 per cent from 2010 to 2018 [2] (Fig.1). The most significant decrease in the number of young researchers aged up to 29 (by 14 percent) took place as compared with 2015.

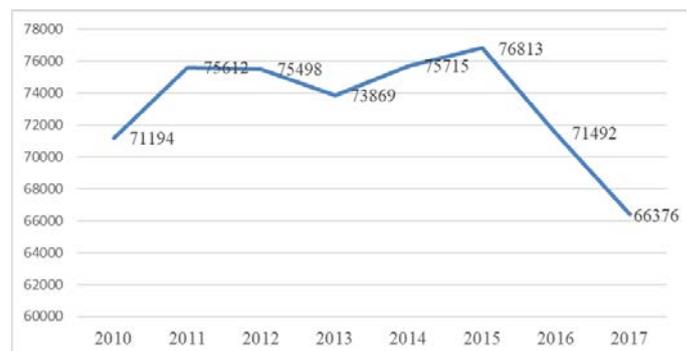


Fig. 1. Dynamics of Number of Young Researchers Aged up to 29, person [3]

A demographic decrease in the number of the young people of laboring age takes place. A decrease in the number of the contingent results in a decrease in the number of the training contingent and training personnel. However, the obvious demographic decrease in the number of young generation is not the only weighty characteristic of economic changes. Attraction of a research-scientist and teacher profession changed significantly. Our study proved that only 22 per cent of respondents considers themselves a teacher (researcher, scientist) by vocation, including only 6 per cent of young specialists. Young specialists found themselves in profession either for fear of the open labor market and competition or by chance.

Expert, aged 27, length of service is 1 year, female: «I definitely do not consider myself a teacher by vocation. I try to get maximum benefit from this process».

The low salary and geront orientation do not allow a young specialist to reach quickly a desired material wealth and living standard. However, some experts mention the equal level of their own income and that of their acquaintances engaged in other economic branches.

Expert, aged 27, length of service is 4 years, female: «Actually, many our graduates work in the commercial sphere, somebody got a job in the public service. We compare our working conditions with those working in commerce or in other places. They do not count on anything special, they do not have fixed salary, they work under the market conditions, i.e. you get what you earn. As

a matter of fact, our activity comes to the same: if you are just a teacher you cannot survive for such money. It means that you should find some additional financial resources, same as in the market, but these bonuses are measured by other activity».

These data are proved by the statistics data on the average salary of workers in the higher education and science sphere and in the commercial sector of the economy. The monthly average nominal accrued wage of RF workers for 2017 was RR39,167.00, RR37,151.00 in Sverdlovsk Oblast [4], RR50,703.00 in the sphere of the higher professional education of RF [5], RR50,500.00 in the Urals Federal University [6]. Comparison between remuneration and working hours should be mentioned separately. Academic professionals mention the following in their expert interviews:

Expert, aged 33, length of service is 10 years, female. «Yes, the financial conditions, especially of a young candidate of science, are not very good as compared with persons of the same age. My groupmates which are sales managers earn much more now ».

Expert, aged 44, length of service is 17 years, female. «We have the geront orientated system, i.e. you will get the normal salary only, sorry, at the age after 40 at best and if your were lucky to defend a doctoral thesis. This is because even the candidate's salary does not allow the normal life". Comparing the working hours with remuneration profession of a teacher-researcher does not seem especially attractive. The branch of science itself has high barriers of entry to the profession. Tightening of the requirements to young specialists is dictated by a complicated competitive activity in the market.

The influence of the academic professional reproduction method in the form of inbreeding dictated by traditional methods and rooted in the branch takes a back seat. High requirements to the level of qualification motivate academic professionals for more active mobility. However, consequences of the economic crises slowed down the mobility progress. According to data of our study, only part of academic professionals represents graduates of the higher educational institution-employer. The major bulk of professionals had the operational experience in other occupation and in other educational institutions. One third of young teachers has the total length of service from 10 to 15 years, out of them the pedagogical length of service from 10 to 15 years have less than half (14 per cent). It may be assumed that these teachers came to the higher educational institution not immediately on graduating but had an operational experience in other spheres not connected with the pedagogical activity. Half of the young teachers has the service life from 5 to 10 years. The total length of service of this REP category practically coincides with the pedagogical length of service, therefore, the given group of young teachers did not have other working experience. For this age group the academic inbreeding can be talked about.

Our respondents chose the international conferences as main ways of mobility. Out of possible ways of mobility and improving qualification 86 per cent of respondents chose the training and training courses in foreign higher schools. Mobility in the territory of the country takes the

second place. Experts mention the importance of the international sharing of experience.

Teacher-expert, aged 28, length of service is 5 years, male: «of course, yes, for me it is important. On the average, 2 times a year I go abroad, this is one more advantage of the work I am doing now. Frankly speaking, there are different opinions in this regard. That is because often all such conferences represent not the exchange of some knowledge but turn into "the scientific tourism", so it is called now".

The most significant demographic factor which characterizes the branch of the higher education and science is ageing of REP [6]. A decrease in the number of the young generation in the Russian population structure and a decrease in the share of young teachers and researchers testify the impossibility of renewal the number of the branch cadre personnel.

The second group of factors affecting the social and professional community reproduction represents costs of research activities and development. According to Rosstat data, the maximum sums of the science financing from the federal budget were in 2015, whereas in 2017 the financing decreased by 14 per cent (Fig. 2)

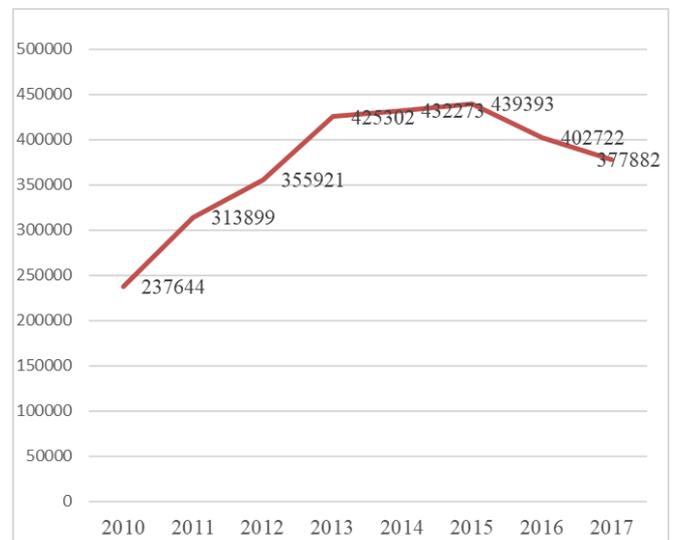


Fig. 2. Dynamic of Science Financing from Federal Budget, RR Mln. [7]

The science financing from the federal budget decreases annually in percentage to the gross domestic product. So, in 2013 the share of the science financing was 0.58 per cent, whereas in 2017 it was 0.41 per cent [8]. The Russian Federation is on the 9th place in the world as for domestic expenditures for research and development [9] and on the 14th place as for the number of articles in scientific magazines indexed in the international databases having not changed the position since 2007.

However, the scientific activity financing is the motivation for the entry and strengthening in the profession. The salary structure of the research and pedagogical personnel includes remuneration for the basic teaching activity and remuneration for the research activity. Such "pay rise" to the salary represents a rather high share in the specialist income.

Expert, aged 27, length of service is 4 years, female: «In principle, if you work you may earn and in the higher

educational institution too. Another matter, it will not be connected with your direct responsibilities meaning the pedagogical activity, it will be something different... I believe it is not fair and resource-incommensurable investment... because the pedagogical activity should be the main one, it brings the main income for the university. That means that in the first place we teach other people and in the second place we can search something ».

Expert, aged 31, length of service is 8 years, female: «At my employment, at the volume of work I carry out, I believe that my total gain, not salary but the total gain correlates with my employment. This is because perhaps more than 50 per cent of my income in the higher educational institution represents additional to the teaching things. They are articles, grants ...».

Expert, aged 28, length of service is 5 years, male: «now the previous grant has been already exhausted, there was no prolongation, however, there are possibilities including stimulation of publications, some kind of agreements or something else. I am quite satisfied with the level. I believe that my previous work in the telecommunication company did not bring me the same money».

If we examine the quantitative index of the scientific activity and the qualitative one the growth of the qualitative index is marked. At a decrease in the number of applications submitted for patents the growth of issued patents took place. In 2010, 42,500 patent applications were filled, and 30,322 patents were granted, which is 71 per cent. In 2017, 36,454 patent applications were filed, 34,254 patents were issued, it is already 94 per cent. For the last seven years quality of patents and inventions grew by 23 per cent [10]. It is difficult to say if there is a direct correlation between expenditures for the science and quality of the research. Our statistical analysis did not find such correlation. The results of the expert interviews also do not answer this question clearly.

IV. CONCLUSION

A decrease in the state expenditures for science does not promote the attractiveness of the teacher/researcher profession. The economic components represent quite significant factors which influence greatly on the social and professional community reproduction. The results of our study showed a direct interconnection between quantitative indicators of the community reproduction and the social and economic situation in the country. Taking into account the age structure of the social and professional community there is a fear of professional shortage caused by a decrease in the number of young people engaged in science and higher education due to economic changes.

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