Students and Employers about the Two-level Education System and Their Assessment of Quality Assuarance at University

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According to the Federal law of 24.1 0.2007 №232-FZ 'Concerning the Introduction of Amendments to Certain Legislative Acts of Russian Federation (concerning the degree system of higher professional education)' all Russian universities should transfer educational programmes to the two level degree system (Bachelor and Master degrees) from 1 September 2009. The main objectives of the reforming strategy of Russian higher education system include:

- adopting a system of comparable documents on higher education, including the introduction of a single application form to the diploma for graduates in Europe for European citizens employability and the international competitiveness of European higher education system;

- transition to a two-level (Bachelor, Master) higher education system and further the three-level system (Bachelor, Master, PhD);

- implementing a system of credits that can be easily transferred (European Credit Transfer System - ECTS) as a means of promoting academic mobility of students, free access to all educational services and expanding opportunities for teachers and researchers to participate in European research and education;

- promoting academic mobility by overcoming obstacles that prevent effective mobility of all stakeholders;

- cooperation in quality assurance with a view to developing comparable criteria and methods. Evaluation will be based not on length or content of courses, but on the knowledge and skills that graduates have acquired. At the same time standards for transnational education will be set;

- increasing the prestige of European education by promoting inter-institutional cooperation, mobility schemes and joint educational programmes, practical training and research.

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The article provides students' and employers' opinion review of higher education reform and importance of developing common cultural competences among graduates. The employers' opinion about graduates of Viatka state university is also cited.

10

Introduction of a two-level system of education in Russia has risen questions not only among high school teachers, but also the employers and students. Many business representatives do not clearly imagine competences of the future bachelors, perceiving them as "dropout professionals." [1]

This article provides students' and employers' opinion review of the switch to a two-level education system, as well as the quality of education at university. A special questionnaire covering the issues was designed. In April and May 2010 students of the fourth year in Applied Mathematics and Computer Science of Vyatka State University, as well as the 10 largest companies – employers took part in the survey. When designing the questionnaires for students, materials developed by the Higher School of Economics and Yaroslavl State University were used. Before completing the form all students were given instructions and an explanation about the evaluation criteria.

At first, students had to define their understanding of "education quality". The majority define "education quality" as education, that provides students the opportunity to acquire good theoretical knowledge and practical skills that enable them to be competitive in the labor market. It should be noted, that in fact students point out a competency based approach, although as it will be shown below, not all of them know or understand the goals and purposes of the Bologna Process.

On the question about students' awareness of the aims and objectives of the Bologna Process, 1 5% of respondents said they are well informed, 31 % – know in general terms or do not know, 23% find it difficult to answer. But 100% of the respondents know about the transition to a two-level education system bachelor-master. For successful employment and career development 85% of students choose a 5-year educational programmes, 4-year- and 6-year programmes are supported by 7,5% of the respondents each one. As for the diploma in "Applied Mathematics and Computer Science", none of the students named a bachelor's degree

as the most attractive for employers, 69% chose specialist degree diploma , 24% – Master's degree, 7% said that the diploma degree does not play any role. 78% of those who took part in the survey plan to work in the professional field, 23% rather do not plan and 1 5% find it difficult to answer. To the question "Are you ready to study at Master degree programme paying a fee if you do not pass the competition for a state-funded place (assuming that the cost of training will be equal to the cost of bachelor programme)?" 62%of respondents said they are not ready to continue their education, 8% – said they are ready and 20 % find it difficult to answer.

To the question "Do you think that there should be a system that enables a student to study at least one term at another university? (Select all variants that apply) 62% of respondents said that all universities should adopt a system when a student is required to spend one term at a foreign university while studying, 23% chose one term at Master programme of another high school, 8% chose another Russian university, 8% – such opportunities should be available only for the best students and 38% responded that such system is desirable but not essential.

From the outlined above statistics it is clear that the students do not quite understand – who is the bachelor and they considere more acceptable and understandable a 5-year-tion educational programmes and qualification of "specialist". Also, the major part of students do not want to continue studying to obtain Master degree, that could also be caused due to misunderstanding who is the master and what are his/her functions. But at the same time, most students are willing to spend one term studying at another university, preferably at foreign ones. The list of counties, where students would like be trained includes the U.S.A, Korea, Germany, Great Britain and France. The issues concerning motivation and choice of the country for training require further investigation.

One of the important ways to control the quality of the learning outcomes

is the implementation of competence-based approach to the modernization of curricula.

It is important to identify several essential characteristics of the competence widely recognized in scientific literature. They are:
- Effective use of graduate skills, allowing to carry out professional activities in accordance with the requirements of the workplace;
- Acquiring knowledge, skills and abilities necessary for professional work with simultaneous autonomy and flexibility in solving professional problems, cooperation with colleagues and collaboration within professional interpersonal environment;
- An integrated set of knowledge, skills and attitudes that are required to carry out activities in a modern industrial environment.

Taking into account the above given definitions become apparent the following features that distinguish the competence from the traditional concepts - knowledge, skills and experience: its integrative nature, correlation with the value-semantic characteristics of the individual, practice-oriented focus.

Competence should not be opposed to professional qualifications, but should not identify with it. The term "competence" is used to describe the characteristics of the integrated quality of the graduate and category of learning outcomes. [2]

In the questionnaire students were offered a question: Please assess the degree of importance of the following general competencies for the graduates in your field of study (knowledge, skills, abilities, i.e. learning outcomes). The development of competence is not important - 1 point, the development of competence is very important - 7 points.

The results of the survey are presented in Table 1.

The following competencies scored the highest means:

- ability to acquire new knowledge, using modern educational and information technologies - 6,62.
- ability to master the basic techniques, ways and means of production, storage, information processing, apply computer skills as a means of information managing - 6,23.
- ability to apply basic knowledge in computer science and modern information technologies, skills in using software tools and computer networks, ability to create databases and use Internet resources in research and professional activities - 6,1 7.

The following competencies scored the lowest means:
- ability to apply basic knowledge of humanities and economics in research and professional activities - 3,85.
- ability to apply basic methods to protect people and operating personnel from the possible consequences of accidents, natural disasters - 3,92.

The following conclusions can be drawn from the presented survey:

1. At this stage, the students position themselves as experts in the field of applied mathematics and computer science, who are able to acquire new knowledge in information technologies, i.e. students as they are in fact.

2. The students view humanities and economic sciences, as well as the ecology and life safety fundamentals of minor importance, which they think will not be much useful in real life. This implies that their training is rather theory, than practice focused. And more students consider themselves engineers rather than managers who are prepared to be responsible for the personnel.

In May 2010, a survey about satisfaction with the quality of graduates was conducted within the project "Development and testing of system aimed at monitoring the level of employer
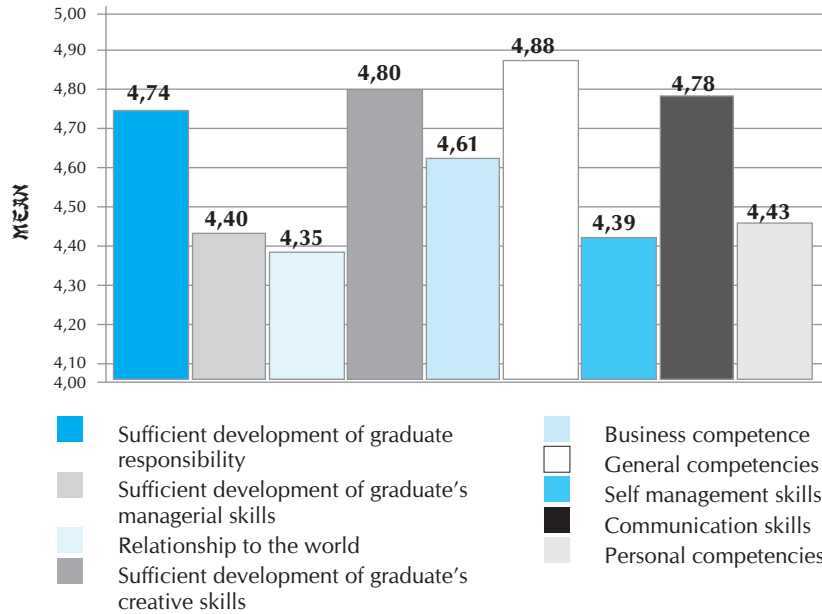
Table 1.

Competency title	Mean
ability to apply basic knowledge of mathematics and natural science in research and professional activities	6,08
ability to apply basic knowledge of humanities and economics in research and professional activities	3,85
ability to acquire new knowledge, using modern educational and information technologies	6,62
ability to collect, process and interpret data needed to form perceptions on relevant social, scientific and ethical issues using modern information technologies	5,69
ability to develop and implement perspective lines of intellectual, cultural, moral, physical and professional self-development and self-improvement	5,33
ability to achieve stated objectives	6,23
critical thinking, ability to change the profile of professional activities when needed	6,15
ability to follow ethical and legal norms, tolerance, capacity for social adaptation	4,92
ability to work as a team leader and a team member, manage people and be subordinated	5,46
ability to think critically about social experience	4,83
ability to follow socially important ideas about healthy lifestyle	4,23
ability to master the basic techniques, ways and means of production, storage, information processing, apply computer skills as a means of information managing	6,23
ability for written and oral communication in native language	5,38
ability to acquire and use in their work foreign language skills	5,75
ability to acquire leadership and managerial skills	4,67
ability to apply information from various sources in research and professional activities	6,08
ability to apply basic knowledge in computer science and modern information technologies, skills in using software tools and computer networks, ability to create databases and use Internet resources in research and professional activities	6,17
ability to apply basic methods to protect people and operating personnel from the possible consequences of accidents, natural disasters	3,92
ability to apply the tools of independent, methodologically correct use of methods of physical education and health promotion, willingness to achieve the proper level of physical fitness to ensure social and professional activities	4,00
ability to use normative legal documents in professional activities	4,77
ability to understand the value and significance of information in the development of modern information-oriented society, to realize risks and hazards arising in the process, to observe basic information security requirements.	5,38

satisfaction with quality of the employed graduates". Top 10 companies of Kirov in the field of mechanical engineering, communications and IT-technology, biotechnology and power engineering took part in the survey. Each company was represented by 2 experts, who had to assess the quality of graduates training on a 7-point scale. The most common assessments aligned in the range 3...5 points.

The results of the survey are presented in Figures 1-4.

Figure 1. Level of employer satisfaction with graduate personal development.

■ Sufficient development of graduate responsibility	▫ Business competence
▫ Sufficient development of graduate's managerial skills	□ General competencies
▫ Relationship to the world	■ Self management skills
▫ Sufficient development of graduate's creative skills	■ Communication skills
	▫ Personal competencies

The highest mean scored "General competencies" - 4,88. They include:
- ■ Good manners - 5,05.
- ■ Cross-cultural communication - 4,95.
- ■ Ability to choose an adequate form for the different conditions - 4,65.

**Figure 2. Level of employer satisfaction with graduate professional development.**

■ Social competencies	
▫ Managerial competencies	
■ General professional competencies	

14
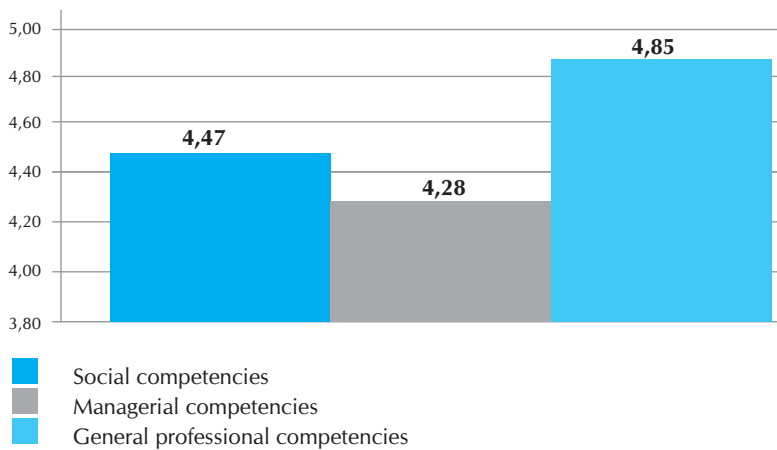
The Figure 2 shows the importance of general professional competencies, that scored – 4,85. In this category the highest assessment was given to:

■ Ability to use global information resources – 5,60.
■ Higher education in the certain professional field – 5,50.
■ Ability to apply skills in using basic software tools – 5,50.

The lowest means:

■ Ability to integrate knowledge within the training process and to apply them when solving social and professional problems – 4,50
■ Ability to work within the international context – 4,30.
■ Foreign language skills – 4,15.

Figure 3. Level of employer satisfaction with graduate preparedness for professional activities.
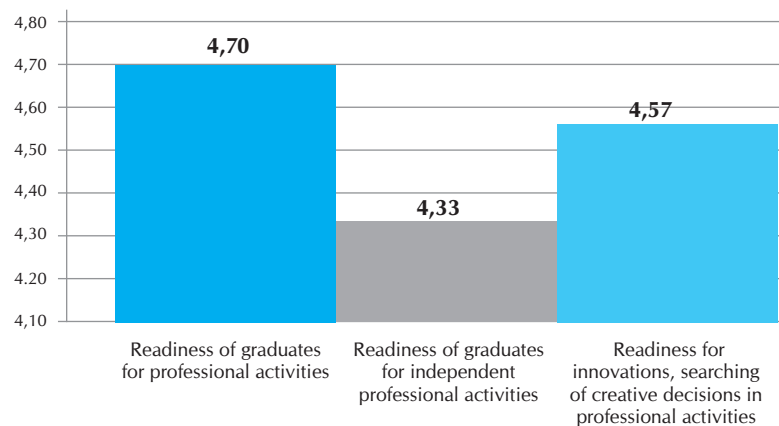
Preparedness of graduates for professional activities was evaluated by representatives of enterprises by an average of 4.7 points (Figure 3).

The highest average score in the category of "satisfaction with graduate preparedness for professional activities":

■ Ability to work independently – 5,15.
■ Knowledge, skills and abilities to solve a set of similar professional tasks with specific technology – 4,75.
■ The ability to choose materials for use in equipment with regard to the influence of external factors, technological and cost effective requirements– 4,55.

The lowest average score:

■ Ability to take on a moderate risk – 4,35.
■ Ability to assess risk and determine the security measures of developed engineering and technology – 4,20.
■ Preparedness for planning and forecasting – 4,20.

The Figure 4 shows that methodological and interpersonal competencies scored 4,76 and 4,74. The highest average score in these categories are:

■ Ability to use modern equipment– 5,15.
■ Ability to use information technologies – 5,35.
■ Ability to perceive and take into account a variety of cross-cultural differences, tolerance – 5,10.

Figure 4. Level of employer satisfaction with graduate competency development.
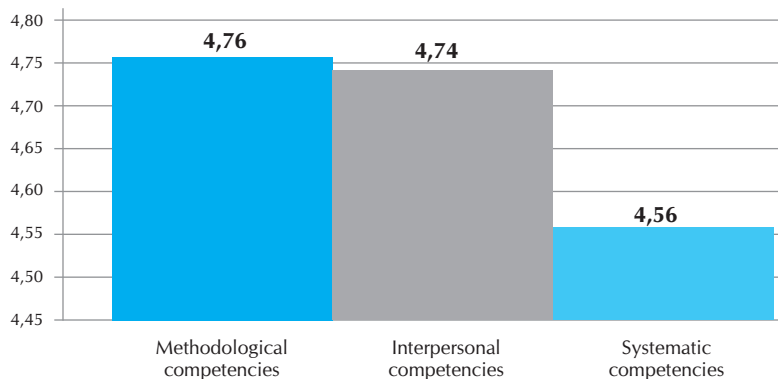
- Commitment to ethical values, professional ethics, traditions and habits in the team - 5,05.
- Ability to perceive and take into account a variety of cross-cultural differences, tolerance of- 5,10.
- Commitment to ethical values, professional ethics, traditions and rituals in the team - 5,05.

   The lowest average score:
- Ability to properly draw conclusions - 4.40.
- Ability to apply knowledge in practice - 4.40.
- Ability to listen and hear - 4.40.
- Ability to organize staff activities - 4,05.

   So, if we combine the results of students and of employers survey, we can draw the following conclusions:
   1. Students value their abilities higher (from 5 to 7 points), than employers do (3 ... 5 points).
   2. Both categories of respondents (both students and employers) highly assess the ability to acquire new knowledge, to use modern information technologies, the willingness to use modern software tools, i.e. professional competences.
   3. At the same time, employers indicated low ability to apply knowledge in practice, to use them in the process of solving social and professional tasks, and students find the social and humanitarian block, which includes management, economics, sociology and other issues, non essential or less important.

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15