Formation of an effective mechanism for staffing in the agricultural sector in the context of globalization and integration through the pedagogical conditions of increasing motivation in students of agricultural universities

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Abstract. The relevance of the research topic is explained by the fact that agriculture belongs to high-risk production, and the modern agrarian sector of the economy requires qualitatively new young professionals who can be not only production technologists, but also entrepreneurs with marketing and production management. This article poses the problem that it is necessary to update the structure of the formation of an effective mechanism for staffing the agricultural sector of the economy in the context of globalization and integration through the pedagogical conditions of forming the motivation of students in agricultural universities. Currently, when preparing qualified personnel for the agro-industrial complex, it is necessary to focus on improving the competence and innovative activity of students. Insufficient study of students' satisfaction with the activities of universities in modern conditions has led to high relevance and the need for this study within the university. The motivation of learning activities is quite widely studied and covered in the scientific-periodical literature, and the satisfaction of students with learning activities is little studied. The lack of knowledge of this issue predetermined the choice of the direction of research by the method of L. V. Mishchenko, where the goal is to clarify the views of students and the development of practical recommendations for improving the activities of the university. The method includes 7 scales and 70 questions of statements of emotional and evaluative nature and the presented answers (wrong, perhaps wrong, right and perhaps true). The article analyzes the level of satisfaction of students with the activities of the university, summarizes the main trends in quantitative and qualitative changes, analyzes the current mechanism as an institution for the formation of highly qualified personnel for the agro-industrial complex of the region.

1. Introduction
Modern agrarian education should become a globally competitive engine of agricultural development. Today, the most important competitive advantage is knowledge, technology and competences. This is the key to real breakthroughs and increasing students' motivation, where innovative agrarian education should become a space for scientific search for creative people who approach the future and are able to look beyond the horizon of agricultural. Our technological development should be based on a powerful base of fundamental science in a number of areas. Agriculture continues to be one of the main links forming the socio-economic policy of the state. The President of the country before all
regions set the task to ensure maximum implementation of industry potential. The Oryol region is confidently moving in this direction, creating favorable investment conditions for the development of the agrarian sector of the economy. Special achievements in the modernization of the agro-industrial complex of the region belong to the research of agricultural scientists and young specialists, which in turn is of great importance in the reform of agriculture and the development of new technologies. Students are young professionals susceptible to innovation, able to work in accordance with the modern requirements of world agricultural development. Currently, the Oryol State Agrarian University named after N.V. Parakhin is one of the agricultural universities of Russia, with a strong training and production base, which allows for the preparation of highly professional competitive young professionals and innovative developments for the agro-industrial complex of the region. The development of the university is largely determined by the demand for graduates and scientific support in the modernization of the agro-industrial complex. Scientists and graduates of the university together are the initiators and guarantors of the development of new technologies and the implementation of agrarian reforms, making a significant contribution to the formation of the agrarian sector of the economy based on knowledge [5-7].

2. Objects and Methods of Research
The information and empirical base of the research is formed on the basis of the questionnaire of university students from 2012 to 2017 and the official statistics of the Ministry of Education and Science. To study the level of satisfaction of students with the activities of the university, L. V. Mishchenko's methodology “Test-questionnaire of satisfaction with educational activities” was used. [2]. The method includes 7 scales and 70 questions of statements of emotional and evaluative nature and the presented answers (wrong, perhaps wrong, right, and perhaps true). The results of the study were processed in the program statistics by the Kruskal-Wallis criterion revealed that in this sample (474 students). The results of the rank of Kruskal-Wallis DA are shown in the form of tables and figures and significant statistical differences in the satisfaction scale of the university’s educational activities, the results obtained are processed, systematized, and decoded. The main results of the study are reflected in the form of articles. The materials of this study can be used in the development of programs, disciplines for training and retraining of students of the university. Conducted studies of the level of satisfaction of students with the activities of the university are of practical interest when working with a contingent of students of the university. The results and conclusions obtained in the course of the study complement the theoretical, methodological and practical aspects of the formation of motivation of students of the university.

3. Research Results and Their Discussion
The University is actively involved in integration into the international space through building partnerships with companies and organizations engaged in research and production activities in the field of agriculture, where students take an active part. Figure 1 demonstrates the distribution of assessments of students of the faculties and the building institute regarding the organizational work to attract students to participate in international projects and programs.
Figures 1. The level of satisfaction of students with the organization of work to attract students to participate in international projects and programs, score.

The average level of student satisfaction with this indicator for the university as a whole is 4.23 points, which is 0.67 points more than in the 2012-2013 academic year (a.y.). To the greatest extent, the organization for attracting students to participate in international programs and projects was satisfied by students of the Faculty of Agrotechnology and Energy in the area of training “Technosphere safety” (4.47 points). The least satisfied students are of the direction of preparation “Power engineering and electrical engineering” (level of satisfaction is 3.76 points). Also, students were asked to rate their satisfaction with assisting in processing applications, documents to foreign funds and programs for receiving grants, etc. (Fig. 2).

Figures 2. The degree of satisfaction of students with assisting in the preparation of applications, documents in foreign funds and programs for grants, etc., score.

On average, the university’s level of satisfaction with this indicator was 4.21 points, which is 0.73 points higher compared to 2012-2013 a.y. The students of the Faculty of Agrotechnics and energy supply (the level of satisfaction is 4.44 points) are the most satisfied with this indicator, including the students of the Civil Engineering Institute.

During the study, students on average estimated the possibility of obtaining additional types of education at the university by 4.46 points, which is 0.28 more than in 2012-2013. At the same time, from Figure 13, it is clear that the students of the faculty “Agribusiness and Ecology” are most satisfied with the possibility of obtaining additional types of education at the university (4.72 points).
Figures 3. Assessment of student satisfaction with the possibility of obtaining additional types of education at the university, score.

Students were asked to answer the question of whether they would like to receive additional education, and if so, in what direction of training (Fig. 4).

Figures 4. Distribution of students' answers to the question: “Would you like to get additional education?”

As can be seen from Figure 4, the majority of students of the Orel State Agrarian University (59%) do not wish to receive additional education, which is 15% more than in the 2012-2013 academic year. Also, the percentage of those who want to get additional education has decreased by 6% compared with the 2012-2013 academic year. The number of students who receive higher education or received (17%) also decreased by 10%. Approximately the same number of respondents (5%) did not decide whether a second higher education is needed.

The students of the Faculty of Economics would like to get a second higher education in the following areas: Technosphere Safety, Jurisprudence, Economic Security. Students of the Faculty of Biotechnology and Veterinary Medicine are interested in such areas as: Surgery, Cynology, Economy, Jurisprudence, Foreign Languages.

Students of the Faculty of Agrotechnology and Energy noted the following directions: Jurisprudence, Economy, Building, Technosphere Safety, Cynology. The second degree in economics would like to receive students of the Faculty of Agribusiness and Ecology.
Figure 5. Assessment of students' satisfaction with the quality of the functioning of infrastructure management processes, educational, and production environment, score.

On average, the university level of student satisfaction with the implementation of these processes has increased compared with 2012-2013 by 0.64 points and made 4.18 points. As the data in Figure 5 shows, the students are most satisfied with the conditions of the university’s sports base (4.3 points) compared to other indicators, as was the case in the 2012-2013 academic year. The most satisfied are students of the Faculty of Economics (4.44 points), the least satisfied are students of the Institute of Civil Engineering (4.21 points). The least pleased with the organization of the work of the university first-aid post (4.03 points) and living conditions in the student dormitory (4.08 points). So let’s consider to a greater extent students of the Faculty of Agribusiness and Ecology (3.6 points and 3.34 points).

The values of such indicators as “Quality of laboratory equipment,” “Provision of computer equipment,” and “Software security” according to students’ estimates in the 2012-2013 academic year increased significantly, by almost one point (Fig. 6). The levels of student satisfaction with pricing and service culture in the canteen, the state of classrooms have increased slightly. Compared to the 2012-2013 academic year, satisfaction with living conditions in the student dormitory and the organization of the university medical center remained virtually unchanged.

Students were asked to assess the level of satisfaction with educational and outside educational work with students. It amounted to 4.17 points, which exceeds the level of 2012-2013, which was 3.8 points. Table 1 reflects the assessment of student satisfaction with the performance of the process of educational and outside educational work with students in the context of training areas.

The organization of educational work with students and the organization of mass cultural work and leisure, according to students, has become much better. And the organization of cultural and mass work and leisure time received a higher score (4.35 points) than the organization of sports and recreational work, the organization of educational work with students, and the degree of participation in student self-government.

The results of the study showed that 25% of respondents are engaged in various circles and sections of the university, which is 7.74% more than in the 2012-2013 academic year (17.26%).
Figure 6. Values of indicators of satisfaction with the quality of the functioning of the infrastructure and production environment management process, score.

Table 1. Assessment of students’ satisfaction with the indicators of the implementation of the process of educational and outside educational work with students in the context of training.

| Indicator of the implementation of the process of educational and outside educational work outside educational work with students | Specialty                                      | The highest level of satisfaction, points | The lowest level of satisfaction points |
|---------------------------------------------------------------|-----------------------------------------------|------------------------------------------|---------------------------------------|
| Organization of educational work with students               | Technical service in agriculture – 5;         |                                          |                                       |
|                                                               | Operation of transport and technical machines and complexes – 5; |                                          |                                       |
|                                                               | Finance and credit – 4;                       |                                          |                                       |
The extent of your participation in student government
Organization of sports and recreational work
Organization of cultural and mass work and leisure

| Activity                                      | Technical service in agriculture | Finance and credit | Management | Construction | Agrochemistry and agrology | Operation of transport and technical machines and complexes |
|----------------------------------------------|----------------------------------|--------------------|------------|--------------|----------------------------|----------------------------------------------------------|
| Technical service in agriculture             | 5                                |                    |            |              |                            |                                                          |
| Finance and credit                           |                                  |                    |            |              |                            |                                                          |
| Management                                    |                                  |                    |            |              |                            |                                                          |
| Construction                                  |                                  |                    |            |              |                            |                                                          |
| Agrochemistry and agrology                   |                                  |                    |            |              |                            |                                                          |
| Operation of transport and technical machines |                                  |                    |            |              |                            |                                                          |

The most active were students of the Faculty of Biotechnology and Veterinary Medicine and the Faculty of Agrotechnics and Energy Supply, which is 27% for each faculty of the respondents are engaged in various circles and sections of the university, and the Faculty of Economics is the smallest one that includes 13%.

Students were also named the reasons why they are not engaged in various circles and sections, namely: (the main reason) is the lack of time among students.

Figures 7 show the distribution of satisfaction scores with opportunities for providing benefits to students from different faculties.

![Figure 7](image)

**Figure 7. Distribution of satisfaction scores with opportunities for providing benefits to students from different faculties.**

The average university level of satisfaction with this indicator is 4.27 points (in the 2012-2013 academic year, the value of this indicator was 3.9 points). To the greatest extent, students of the Faculty of Agribusiness and Ecology are satisfied with this indicator (4.6 points). The lowest score for this indicator was given by students of the Faculty of Economics (3.98 points).

The average point of satisfaction with informing the university was 4.2 points, which is 0.57 points more than in 2012-2013 (3.63 points). Most of all, students are satisfied with information about the organization of the educational process and about current changes, least of all with information about existing international programs and projects (Figure 3.1). However, the value of this indicator compared to the 2012-2013 school year increased by 0.63 points.

The study revealed the attitude of students to problems existing in rural areas. The overwhelming majority of respondents (71%) are not indifferent to what is happening in rural areas, which is 12% less students compared to the 2012-2013 school year (83%). Students note that a large outflow of youth is taking place in the villages, the infrastructure is poorly developed, and the system of crediting agricultural enterprises has not been established. Therefore, according to students, it is necessary: to develop the infrastructure; build roads; revive collective and state farms; create jobs; attract young people, investors, bring agricultural producers to the market without intermediaries.
According to the survey, only 22% of students plan to work in rural areas after graduation, more than 19% compared to the 2012-2013 academic year (3%), and 68% of the respondents are not going to do it; although, 66% of students and 3% of students in the 2012-2013 school year probably lived and work in rural areas, and 7% found it difficult to answer.

The research data showed that the majority of students do not combine work with study – 62%, which is 14% more compared to the 2012-2013 academic year (48%). 20% of respondents combine training with work, which is 10% less compared to the 2012-2013 academic year (30%). The largest share of employees, as in the 2012-2013 academic year, falls on the Faculty of Agrotechnology and Energy Supply, but if compared to the previous period, the number of working students decreased by 18%. In turn, 18% of students sometimes earn extra money, which is 5% less than in the 2012-2013 school year (23%). The largest share of such students study at the Faculty of Agribusiness and Ecology (23%).

The majority of 58% of students indicated that their work (part-time job) is not related to the education they receive, which is 38% less compared to the 2012-2013 academic year (20%). Almost the same number of respondents answered that their work (part-time job) is related to the education they receive or not entirely connected (22% and 19%, respectively). The largest share of students working in their field of training, as in the 2012-2013 academic year, falls on the Faculty of Agrotechnology and Energy Supply.

The university fully meets the needs of students with their activities and personnel needs of the region in accordance with the training programs being implemented. According to the Ministry of Science and Higher Education of the Russian Federation, published in 2016 and 2017, the share of employed graduates in 2014 and 2015 is 80%, which exceeds the regional threshold by 10%, and the geography of their employment covers the whole of Russia. More than half (56.4%) of employed graduates remained to work in the Oryol region [3, 4].

4. Conclusion
The motivation of the students is the main driving force in the process of forming the future young specialist of the agrarian profile. Summarizing the above, it is necessary to emphasize that the motivation of students depends on many factors: modern trends in the development of agriculture; the social package of a young specialist, including the solution of the housing question and the social aspects of life support; career growth and social adaptation in the labor market in the modern conditions of the country's development; the university’s material and technical base; the high level of
professionalism and pedagogical approach of the professorial teaching staff; the image of the future profession.

Now we have the opportunity to improve the level and quality of education, taking into account the interests of students and employers, in order to achieve qualitative changes in the training of students, including in advanced and highly deficient areas in the field of agriculture.

References
[1] Gulyaeva T I 2018 Collection: Plant genetic resources - the basis of plant breeding and seed production in the development of organic agriculture Materials of the All-Russian scientific-practical conference 3-11
[2] Mishchenko L V 2007 Bulletin of Practical Psychology of Education 3 pp 122-128
[3] Klimova S P 2016 Journal of Education, Science and Production 3 pp 22-24
[4] Kondykov A V and Klimova S P 2017 Collection: Food Security: From Dependence to Independence pp 302-305
[5] Bogoviz A V, Gulyaeva T I, Semenova E I and Lobova S V 2019 Transformation changes in the system of professional competences of a modern specialists in the conditions of knowledge economy’s formation and the innovational approach to training Studies in Systems, Decision and Control 169 pp 193-200
[6] Bogoviz A V, Gimelshteyn A V, Shvakov E E, Maslova E V and Kolosova A A. 2019 Digitalization of the Russian education system: opportunities and perspectives Quality - Access to Success 19(S2) pp 27-32
[7] Bogoviz A V, Lobova S V, Ragulina J V, Vypryazhkina I B and Boldyreva I N 2018 Educational incentives for creating high-performance jobs Quality - Access to Success 19(S2) pp 57-61