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# The Main Directions of University Professors' Research-Oriented Activity

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## Abstract

The willingness to organize and carry out academic research, gain new knowledge and apply it into practice should become a distinctive feature of any modern and creative university lecturer. The federal state higher education standards oblige faculty members to possess research competencies. The research-oriented activity of a university lecturer implies that scientific and pedagogical search become an integral part of lecturers' professional practice. The following directions of research-oriented activities can be distinguished within the framework of higher education: publication activity, network research interaction, integrated research in various scientific areas, participation in scientific events, academic advising for young scientists; supervision over students' research activity etc. This research is aimed at identifying problems that a university faculty member faces when organizing and carrying out scientific and pedagogical work as well as using new knowledge, which should become a condition for the faculty member's competitive advantage and the basis for their research-oriented activities.

Keywords: scientific research, research-oriented activity, research-oriented activity monitoring, research-oriented activity directions.

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## **Introduction**

The modern dynamic world imposes new requirements on the university teaching staff and their professional and research activities. According to Kuzmin, Slastenin, Spirin, Frumkina (cited in. Kosolapova, 2011) the professional activity of a university professor should involve addressing a variety of consistent strategic, tactical, and operational tasks. The university professor's scientific and professional activities are determined by the following regulatory documents, which are obligatory for fulfilling an educational program: the Federal State Educational Standard, Federal Law "On Science and State Scientific and Technical Policy", and occupational standards "Vocational training, vocational education, and additional vocational education specialist". Research activity is characterized by a willingness to organize and carry out scientific and pedagogical research independently (Ibragimov, 2019), an opportunity to get new knowledge and implement it in practice. Many authors describe this activity as a multifaceted process (Boldyreva, Mikhaleva & Sabinina, 2017; Vasilyev, 2016; Gareev, 2017), which is characterized by creativity within scientific research, on the one hand, and educational program development, which contributes to content enrichment and professor's qualification improvement, on the other hand.

When organizing research activities, a faculty member may encounter certain difficulties, including insufficient ability to single out contradictions and define the research problem, object, subject and other elements of the scientific conceptual construct; choose the necessary research methods, process, analyze, and interpret the results taking into account the available scientific data; interpret the pedagogical research results (Ibragimov, 2019).

The research activity is often characterized as an organized scientific inquiry process. Therefore, the concept of "research-oriented activity" is now commonly used in the academic community. However, scientific information sources do not have an exact definition of this concept, which would reveal its content. In our research, we tried to define this concept and note that the university professor's research-oriented activity is an integral part of their work that involves responsibility and conscious, independent scientific and pedagogical search for new knowledge and new experience aimed at increasing their teacher expertise.

Insufficient degree of problem development in organizing research-oriented activities of the teaching staff leads to certain difficulties in identifying issues in the organization of this activity and planning their further career strategies in the face of modern challenges.

## **Purpose and objectives of the study**

The purpose of our study is to monitor university professors' research-oriented activities and plan their further career strategies. The objectives of this study are to develop a methodology for identifying problems in the organization of faculty members' research-oriented activities and an adjustable modular program for the elaboration of these university professors' activities. The article examines the experience of the Institute of Psychology and Education of Kazan Federal University.

## **Literature review**

Research activity is an integral part of every university professor's work. The Federal Law "Concerning Science and State Scientific and Technical Policy" defines the academic (research) activity as "the type of activity aimed at obtaining and applying new knowledge, including fundamental scientific research, which is experimental or theoretical activity aimed at obtaining new knowledge on the basic laws of the structure, functioning, and development of human, society, and the environment; applied scientific research aimed at using new knowledge for achieving practical goals and solving specific problems; exploratory research aimed at obtaining new knowledge for their further practical application (oriented research) or using new knowledge (applied research, which are carried out by performing academic activities)." (Federal Law of 23.08.1996 N 127-FZ , as amended in 2016).

The academic teaching staff's need for certain scientific knowledge and skills is also determined by the occupational standards for teachers. Thus, the occupational standard "Vocational training, vocational education, and additional vocational education specialist" was introduced in 2015. This standard describes the faculty members' job functions and provides scientific and methodological support for the implementation of supervised training courses and modules for undergraduate, specialist, and graduate programs (Boldyreva, Mikhaleva & Sabinina, 2017; Vasilyev, 2016).

The faculty member's research activity is also described in the works of Zagvyazinsky (2010), Zimniaya (2010), and Slastenin (2005). These authors noted that research activity is an integral part of the teacher's job, the value of their professional qualities, and the form of realizing their creative potential.

More modern studies describe research activity as an integral system based on scientific achievements and scientific and pedagogical experience and aimed at increasing competence, professional skills, and teacher's creative development (Sviderskaya, 2016; Smolyarchuk, 2017).

The main directions of this activity in higher education institutions are the development of innovative projects by faculty members aimed at implementing the university development program; participation in academic and research events; publications; scientific advising to postgraduate and doctoral students; academic advising for students in their research work; new research monitoring (Kozmina, 2014).

One of the previous studies (Dyusheeva, 2007) led to the following conclusion: the performance of a university professor is approximately 69% dependent on their research activities; the content of education (approximately 32%) and their authority among students and colleagues (approximately 32.9%) depend on this directly.

Talcott Parsons (2007) admits in one of his works that education in an academic institution is a full-fledged stage of socialization for a person, and those who are not involved in rational, scientific thinking are not able to teach it. It should be noted that the question of the faculty member's scientific activity's influence on the quality of their teaching is still debatable.

The analysis of the scientific (research) activity directions in higher education institutions allows us to define the following research activity results: the number of faculty members taking part in research activities; the number of students taking part in research activities; the number of monographs published; the number of published articles and articles accepted for the publication in the journals recommended by the number of published articles and articles accepted for the publication in the journals indexed in the international Scopus and WoS databases; the number of patents and registration certificates for intellectual property objects; the annual amount of research financing per one faculty member. However, this information does not allow us to form a true opinion about the conscious and responsible scientific and pedagogical search for new knowledge and new experience by the faculty members of higher education institutions.

As the analysis reveals, research activity is defined as an organized scientific inquiry process. Therefore, the concept of "research-oriented activity" has been commonly used in the academic community recently. However, scientific information sources do not have an exact definition of this concept. We define the research-oriented activity of a university professor as conscious, responsible, and independent scientific and pedagogical search for new knowledge and new experience aimed at increasing faculty member's pedagogical expertise. All these are an integral part of their professional activity, along with educational, methodological, and organizational work.

In this research, we analyzed the main research-oriented activities of the Institute of Psychology and Education of Kazan Federal University. This analysis allows us to highlight the following areas:

- The development of the network for research interaction in the psychological and pedagogical education areas and their partner universities. According to this regulation, research is carried out in collaboration with the authors from partner universities under the guidance of experienced scientific journal editors and renowned scientists. This regulation was developed due to the fact that joint research is usually more multifaceted and interdisciplinary.
- The organization of the annual international forum on teacher education with renowned scientists and editors of well-known foreign journals. In the course of this collaboration, faculty members can ask them questions about preparing and promoting their research, as well as establish business contacts with them for further comparative research, which also allows for strengthening international collaboration and representation of our publications in world journals.
- Keeping the succession in scholarly traditions in the study of a certain scientific problem. When developing joint research, it is necessary to be guided by the scientific interests of the co-authors and the challenging problems, which they have been engaged in for a long period.
- High-quality targeted academic advising for young scientists who start presenting their research in globally renowned journals. Each department has its own mentor famous for their publications in highly rated journals who coordinates research of beginner faculty members.
- Preliminary coordination of research issues with the Expert Commission of the Institute of Psychology and Education of Kazan Federal University. This procedure helps to approve the research plan, which states the research issue, aim, content, its expected practical relevance, and the planned topics of scientific articles.
- The development of integrated cross disciplinary research.

Thus, there are different approaches to the problem of the faculty staff's research-oriented activity organization and direction. However, this fact often leads to certain difficulties in organizing the faculty members' research activities and planning their further career strategies in the face of modern challenges.

## **Methodology**

The method of scientific and theoretical analysis of publications and the research of the essence of the problem under study, the diagnostic method of collecting survey information, and the statistical processing of empirical evidence were used as the foundation for this research. We have developed a questionnaire to identify problems in the organization of the university professors' research-oriented activity. It should be emphasized that monitoring plays a special role in improving the quality of faculty members' research-oriented activities (Strokova, 2016). The collected monitoring information reveals the real issues in research activities that need to be resolved by the educational organization. This questionnaire was composed taking into account all areas of the university's and faculty members' scientific, professional, and research activities.

## **Results**

The study involved 36 respondents - faculty members of the Institute of Psychology and Education of the Kazan Federal University. These respondents not only implement training of future teachers, but are also engaged in their own research activities and research activities of their students.

In general, the survey results indicate the faculty members' high satisfaction with the conditions the university provides for implementing research and professional activities. 38.8% of professors are completely satisfied, 36.1% are partially satisfied. The dissatisfaction rate is 5.5%.

In general, information and electronic resources provided by the university are quite accessible and meet the faculty members' expectations. About 44.4% of respondents are absolutely satisfied with the university's educational environment; 41.6% of respondents are satisfied with the electronic databases and Internet resources availability.

However, only 27.7% of the respondents are fully satisfied with the level of awareness on the research activities at the university, scientific conferences and competitions for scholarships and grants. The above mentioned results of the survey are represented in Figure 1.

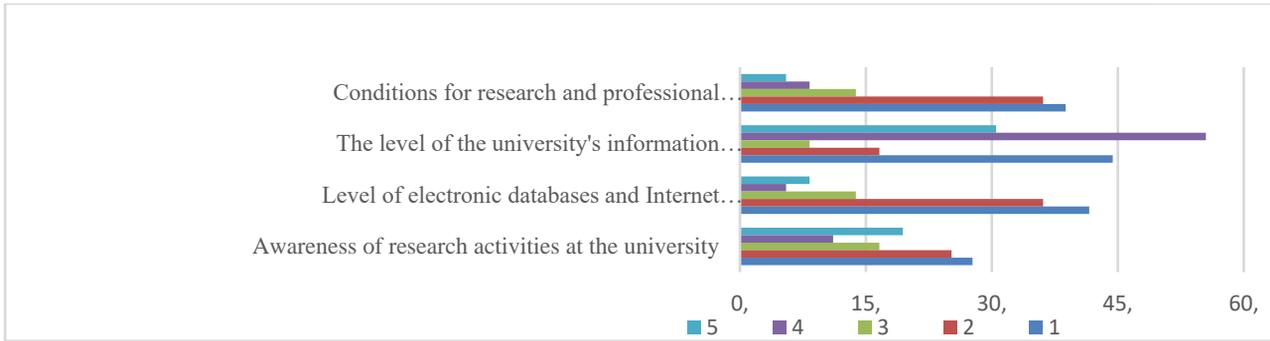


Figure 1. Comparison of the values for the conditions at the university

52.7% of faculty members highly appreciate the opportunities provided by the Institute in organizing network research cooperation with partner universities. 50% of the respondents appreciate the opportunity to collaborate with world-renowned scientists, as well as editors of well-known highly rated foreign journals to prepare their research and its possible promotion.

33.2% of the respondents appreciate the professionalism and expertise of scientific mentors who provide academic advising to beginner and young scientists on the presentation of their research in Russian and international journals. 38.8% highly appreciate the need to establish the procedure for protecting a research plan, where the author reveals its issue, aim, content, expected practical relevance, and the planned topics of scientific articles (Figure 2).

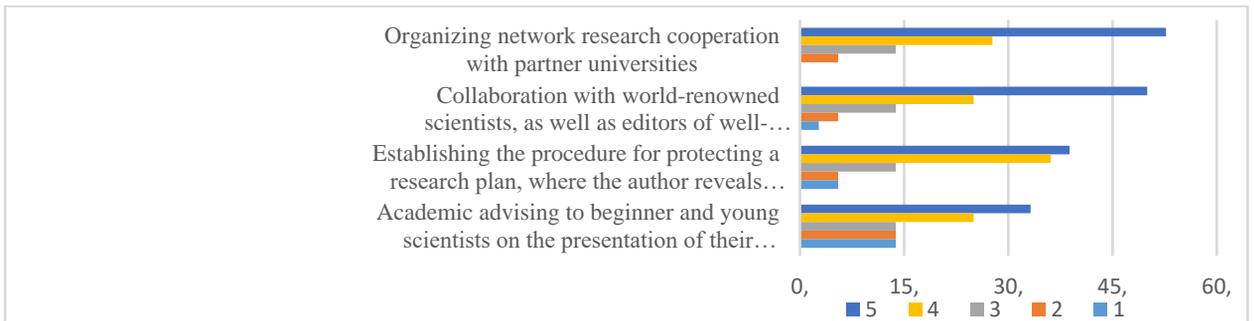


Figure 2. The comparison of self-orientation values in the organization of research-oriented activities.

However, the primary analysis of the survey results reveals a number of problems that the faculty members face when organizing their professional and research activities.

For instance, the majority of the respondents note the need for additional information and additional advice in the following areas: digitalization of education (38,8%); the development of programs for various subjects (27,7%), and methodology of organizing research practice for students (33,2%). Scientific articles design and the features of their promotion to highly rated foreign journals (35,9%), independent preparation of the scientific article design with the empirical research results (41,6), grant and international activities (44,4%) also cause difficulties. Data on the percentage ratio of the issues in research-oriented activities are presented in Figure 3.



Figure 3. Directions for the organization of research-oriented activities

After the problems in the organization of research-oriented activities had been revealed, we turned to the second research task, which is to develop a variable modular program of research-oriented activities for the faculty members. The key modules of this model in the initial survey were the following: digitalization of education, work program design, teaching practice content, scientific articles design and their promotion, grant activities. A professor or a group of professors from the Institute of Psychology and Education are responsible for each module. They organize seminars and consultations on various topics. The variable program modules are presented in Table 1.

Table 1. Modular variable program for the university professors' research-oriented activities

Module name	List of module topics
Digitalization of education	The place and role of a university professor in digitalization. The features of the education process visualization. The digital platforms and their characteristics. The features of digital learning resource development.

The development of academic course working programs and student performance assessment systems	The Federal Educational Standard. The corporate requirements to academic course working programs and student performance assessment systems. The relationship between the content of education and training effectiveness according to the competencies. The features of work programs and student performance assessment system design. The development of learning and teaching support kits for different subjects.
Teaching practice	The main steps of academic training and work experience internship. The methodology for organizing research practice in a pedagogical magistracy. Research Practices Toolkit. Research Practice Program.
Scientific articles design and their promotion	The peculiarities of scientific article databases in Russia and abroad. Indexing systems. Working in article indexing systems. Choosing a journal for publication. Science-based ethics of publications. Working with editorial staff. Summarizing scientific research results. Experimental material presentation. Article structure. Scientific publication style. Working with data sources. Publication format. Article publication and indexing peculiarities.
Grant activity	The concept of grant. Grant sponsors. Grant organization. The procedure for using grant sources of funding for scientific activities. The information support of grant activities. International grant programs: The Fulbright Program, DAAD, Erasmus. The Russian KIAS system. The peculiarities of grant application filing. Scientific capacities. Preparation of grant documentation. Grant implementation. Financial reporting.

## Discussion

As part of the stated experiment, we proposed the key development directions of faculty members' research-oriented activities, which contribute to the continuous improvement of their research competencies and planning their further career strategies in the face of modern challenges. We also developed a questionnaire as a diagnostic tool, which helped identify problems in the faculty members' research-oriented and teaching activities. The faculty members from the Institute of Psychology and Education of Kazan Federal University who train future teachers took part in the survey. The first survey results revealed the primary problems in their research activities and confirmed the need to develop a variable modular program oriented to teachers in higher education aimed at improvement of the above-mentioned activities.

The basic modules of this model were the following: digitalization of education, subject program design, academic training content, scientific articles design and promotion, grant activities. The content of modules is revealed depending on the difficulties that higher education teachers encounter in teaching and research activities. A professor or a group of professors are responsible for each module. They organize seminars and consultations on stated topics. In this way, when developing the module "Digitalization of education", such difficulties of faculty members as developing visual educational content, creating and using digital educational resources in teaching activity were taken into account.

When developing the content of the next module "Scientific articles design and promotion", the following difficulties were taken into account: generalization of scientific research results, presentation of experimental materials, structuring of an article and using a proper style in scientific publications, design of publications with an article preparation (depending on a journal by a Russian or a foreign publisher), scientific ethics of publications, collaboration with an editorial board and others.

The new program modules can be added as problems in the organization of research-oriented and teaching activities are identified. These can be economic problems, problems related to management, and others. It all depends on the needs that may arise at the stage of the initial problem identification.

### **Conclusion**

The methodology for identifying problems and the adaptive modular program for the development of faculty members' research-oriented activities will fill the gaps in research, methodological, digital, grant, practical, publication and other activities of university professors; provide social and professional adaptation for young teachers starting their professional activities at the university; contribute to the competitive advantages of faculty members in research and methodological activities.

The methodology for identifying problems in research activities, the proposed directions of pedagogical support for research-oriented activities and the developed adaptive modular program can be implemented in higher educational institutions.

### **Acknowledgments**

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