

THE ROLE AND SIGNIFICANCE OF SCIENTIFIC-RESEARCH ACTIVITIES IN FIELD OF HIGHER EDUCATION

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Abstract

More advancement in scientific activity is necessary to reevaluate the challenges of modern world and their possible solutions. Research-based solutions can be effective for the development of numerous fields as well as for resolving issues in economic, social, cultural, or other spheres. This was demonstrated by the Covid-19 pandemic, when the vaccination was created. The vaccination as a consequence of a scientific approach led to stop the pandemic. Accordingly, it is crucial to support the growth and development of research activities and encourage scientific activities among students in universities and higher education institutions¹ where the teaching-learning process and research activities are carried out, new knowledge and experience are created. This is done in order to update and consolidate existing knowledge, as well as to create new knowledge and integrate it into the educational process and the economy.

The goal of this paper is to reveal the activities of universities and teaching universities in the field of higher education. It does this by providing an overview of international studies, a general discussion of the significance and role of scientific-research activities in the development of higher education, as well as the findings of research carried out in Georgia. The paper includes both an overview of international studies, a general discussion of the importance and role of research activities in the development of higher education, and the qualitative research results conducted in Georgia, the purpose of which is to reveal the activities of universities and educational institutions in the field of higher education.

In this process, employees of the research departments from 10 Georgian universities/teaching universities, who are presented in the study as experts in the field were interviewed (in general 15 experts). The novelty of the study consists in its description of the challenges facing Georgia's higher education system, as well as the identification of the role that research activities play in the activities and development of universities.

The main findings of the research can be considered that the primary function and role of universities is to transfer existing knowledge to younger generations, as well as to create new knowledge. Through their research initiatives, universities play a significant role in the creation of new knowledge, which contributes to the formation of highly qualified personnel and develops various fields. Also, the issue of raising adequate funds for research and internationalization of research, which will increase the accessibility of scientific projects to local and international markets, remains an important challenge.

Keywords: University, Scientific activity, Research, Challenge, Development.

Introduction

In modern reality, people's life moves at an accelerated pace, constantly undergoing changes, which is largely due to scientific advancements. The irreversible process of globalization in itself accelerates the economic, social and cultural processes taking place in the world and, at the same time, makes any

¹Higher education institutions – an educational scientific research institution carrying out higher educational program/programs (except doctoral). <https://matsne.gov.ge/ka/document/view/32830?publication=97> [L. s. 09.11.2022].

information accessible and contributes to the creation of new knowledge, which is to some extent the result of scientific research.

It should be emphasized that technological advancements, the widespread use of the Internet, and telecommunications are commonly mentioned while discussing scientific accomplishments in the modern world. Today, science is viewed as the cornerstone of worldwide social progress as well as the main driving force of economic and social development. Modern science is focused on drawing up a long-term vision and plan for the development of society, which is directly related to the growth of the country's economic indicators. Those countries, where the amount of natural resources is scarce, are mainly focused on the creation and production of intellectual knowledge, therefore, their economic growth indicators depend on scientific and technological advancements.

In the process of developing of the country's social, economic or living culture, the active involvement of the higher education sector is of crucial importance, not only in terms of transmitting and sharing existing knowledge to new generations, but also in terms of creating and producing new knowledge through scientific and research activities.

Universities and educational institutions play a key part in this process because it is there that research is done and new knowledge is generated, which should help to overcome the problems mentioned above. The role of modern universities is no longer only to share existing knowledge, it is very important to create new knowledge and thus advancement of numerous sectors.²

The primary difficulty facing contemporary academic institutions is how to address societal issues and educate such citizens who can create better conditions for the life in society. The main objective of the paper is to present the importance of research in academic life, as well as the function and role of the university in the modern world. This paper gives an overview of modern literature on the research topic, along with a brief expert survey and an analysis of the findings.

1. Methodology

First of all, it should be noted that the purpose of this research is to study the significance and role of the research activities in the field of higher education. The research methodology presented in the paper involves the qualitative study of the representatives of the research department of universities and educational institutions operating in Georgia, who have direct contact with the management and development of research processes in the university/teaching university. In relation with this it is noteworthy to discuss the research questions which were given in the questionnaire: why are research activities important for higher education field? What goals should have university elaborated in line with research activities? What are the values that the research activities should be based on at university? What is the main function and role of the university in 21st century? What aims should have the university in modern era? Also, the questionnaire included the topics related to existing challenges in higher education system. Moreover, the study aimed to reveal the fields where the scientific activities are actively presented and fields that need more support.

The participants of the study have some level of expertise in the relevant field, as they are in direct contact with the development of research activities and management processes in the sector of higher education. A semi-structured questionnaire was used for the research using a qualitative research methodology. Through open-ended questions, participants were given the chance to express their thoughts on the significance and function of research activities in academic institutions. The questionnaire was completed

² Vessuri, H. The Role of Research in Higher Education: Implications and Challenges for an Active Contribution to Human and Social Development in book Higher Education in the World 3, 2008. Pp.119-114.

by a total of 15 respondents from 10 universities/teaching universities. The questionnaire was filled out online by the participants.

2. Literature review

2.1 What is the role of research in higher education

According to various studies and expert opinions, the higher education system needs to respond to global concerns and actively contribute to the development of mankind and society. It is important to reevaluate the importance of research and integrate knowledge into social processes. When scientists and experts from other sectors get together in order to create approaches that contribute to the growth of the higher education vision, it is important to find ways that contribute to the development of the vision of higher education. It is also crucial to consider how these visions should be applied and connected in practice. Only the intersection of science and different fields allows the development of new knowledge.

When it comes to research, it should be noted that the primary function of the university is teaching and research activities should contribute to enhancing the standard of instruction and creating a team of new professionals.

The university community became involved in academic research around a century ago, when Columbia University pioneered a center (1928) where teaching, research and patient care were all housed in one space. Later, in 1945, the University of Cambridge started conducting research activities. Teaching and a desire for knowledge have always been the two fundamental drivers behind the incorporation of research into institutions.

Throughout history, university activities have always been noteworthy. For example, Hammerstein reminds us that "European universities are the oldest European universities excluding the Catholic Church".

Researcher William Henry Perkin says that the emergence of universities is a special stage in the world history of higher education. However, it is worth noting that European higher education was constantly influenced by various cultures, including the influence of countries such as Egypt, China, India, Islamic countries and others.

The research process itself does not imply the discovery of something brand-new or previously undiscovered. The knowledge that already exists about a certain event or phenomena is updated and expanded during the study process. The most crucial aspect of research is finding answers to questions.³

The quality of instruction is enhanced by qualitative research. Based on the fact that universities not only disseminate, but also produce new knowledge through research, it is crucial that the research process promotes excellent instruction. Is it interesting to discuss the role of the university in the 21st century? A university in the modern sense is a space where academic staff, administrative staff, and students work together to foster the production of new knowledge and new platforms for growth.⁴

Taking into account the modern understanding of the university, the role of a teacher in a university is entirely different from the role of a school teacher. First of all, the lecturer should be a friend, mentor and guide for the students, sharing his life experience with them. He or she should also assist the students in beginning their professional lives⁵.

³ Lakhota, S. Research and Innovation in Universities: Why and How These Should Promoted in book Quality Mandate for Higher Education Institutions in India. University Grants Commission, 2021, pp.89-114.

⁴ cf. Footnote 3. s. 89-114.

⁵ cf. Footnote 3. s. 89-114.

2.2. The future of universities and research

The document prepared by the of European University Association - "Universities without walls: a vision for 2030" presents in detail the future priorities, needs and values that universities will have to fulfill by 2030, which will be both the main challenge for them and the perspective of future development⁶.

Universities should first construct a clear vision for their future development, including the direction they want to go in, the goals they aim to achieve, and the way they will respond to modern challenges. To accomplish these tasks, they will need more openness to various circles of society or sectors.

According to the document of the Association of European Universities, in the future, the structure of universities will become increasingly hybrid⁷.

As for the process of internationalization in universities, European universities will be significantly more transnational and multinational in the future laying the foundation for research and innovation. Moreover, for higher-quality teaching. The implementation of combined teaching and research projects, as well as the development of pro-European attitudes on a local and global scale, can be considered the future missions of universities.

The future mission of universities can be considered to be the implementation of joint projects on teaching and research, the formation of a positive attitude towards Europeanism at the global and local level.⁸

According to this document, universities in Europe will have greater autonomy by 2030, to be able to make strategic decisions on organizational, financial and other issues independently.

More research and researchers will be included in the teaching process. Universities will be more actively involved in research, in the direction of both fundamental and applied sciences. In addition, university-based interdisciplinary research projects and publishing systems will be more developed. Naturally, universities will continue to implement doctoral programs ensuring the formation of highly qualified researchers.

The future mission of universities can be considered that they will be involved in the process of dealing with world challenges together with various partner organizations. Therefore, universities will play a leading role in the development of the innovative ecosystem, bringing together stakeholders with a similar vision from the academic, business, civil or start-up sectors.

For the future development of universities, it will be necessary to make more financial investments in order to develop science, create new knowledge and improve technologies. In the future, it would be ideal to increase universities' financial independence so that they can choose their own strategic priorities⁹.

Let's discuss a few studies that relate to the challenges the university system faces, as well as the function and role of research activities. According to one study, it was found that the qualitative measurement of research achievements in universities is difficult for the following reasons: universities are simultaneously engaged in different types of activities (teaching, research, knowledge transfer or creation). As a result of these activities, different results are obtained, so the qualitative or quantitative component of the results may even change.

The research works published by the university's academic staff, their citation index, and then patents are the most commonly used indicators when analyzing research results. The multi-productivity nature of universities should be taken into consideration when evaluating the outcomes of university research rather

⁶ Universities without walls - A vision for 2030 European University Association, February, 2021.

⁷ cf. Footnote, 6.

⁸ cf. Footnote 6.

⁹ cf. Footnote 6.

than relying solely on one indication, such as publication or patent. Some universities are more specialized in the social sciences, others in the humanities, where the main result of research is a publication, and in other more practical fields, for example, in technology, a patent¹⁰.

The term "knowledge-based economy" comes from the recognition of the importance of knowledge and technology in advanced economies. These societies are characterized by the greater dependence on knowledge in all spheres of activity. Almost every field of activity relies on the use of knowledge and knowledge management. There is no doubt that knowledge is a key driver of economic empowerment¹¹. Universities have evolved from highly regulated institutions to more collaborative decision-making organizations and become more interactive in the direction of social development.

The paper reviews the research, where the target group is university's administration, including the vice-rector, dean, and heads of departments. The research interviewed leading experts in the field, who see the issues of higher education and research in Sweden from different perspectives. The purpose of this study is to examine the role of academic leaders in creating a successful research environment¹².

In the process of creating new knowledge, it is crucial and important for universities to realize that the interest of young people, students in research activities is crucial for the development of science. The participation of students and young people in research activities is crucial to the advancement of science in order to effectively create new knowledge.¹³

According to one of the studies conducted in 2013, 2015 and 2017, students of all three levels of education were interviewed using the focus group method. Within the framework of the research, it was revealed that in order to develop research activities, a special emphasis should be placed on the doctoral level, because during this period students are already engaged in their own research. Doctoral programs have a special load, which determines the prerequisite for the development of the university in the research direction. The main conclusion of the conducted research is that the development of a modern university, the high level and quality of education and training are related to the encouragement of research and scientific activities, therefore, the creation of new knowledge, which is carried out on the basis of the university. In this process, the lecturers and students of the university should be actively involved together.¹⁴

It should also be emphasized that graduate students are involved in research work, which is denoted by the English term – "undergraduate research". It happens that students graduate from university without ever having interacted with research professors and the research process. To improve the standard of the educational process, research universities should make sure that the graduate students in their programs are actively engaged in research activities.

It is rather difficult to give a precise definition of what the research of the final course is. This is postgraduate research level where research skills are developed.

The research objective was to reveal the interest in science among college and university students, how they use academic knowledge gained after graduation in practice, how motivated they are to create new knowledge and participate in research activities. The obtained results have shown that students do not analyze the academic knowledge they have acquired and use it less in practice.¹⁵

¹⁰ Serrano, L., Manuel, P. J., The Research Output of Universities and its Determinants: Quality, Intangible Investments, Specialization and Inefficiencies. 2016.

¹¹ cf. Footnote 10.

¹² Carlsson, H, K., Söderholm, Anders, A. Research Quality and the Role of the University Leadership, 2014.

¹³ Valentin, R., Pavel. I. A. The Purpose of Research in Universities. 2012.

¹⁴ Manov, B., Milenkova, V. Students' research activity as a contribution to modern university, Scientific journal Anthropological Researches and Studies, 2018.

¹⁵ Al-Hassanieh, S. University Students' Role in Improving Scientific Research Systems. Higher Institute of Administration Development (HIAD), Damascus University, 2006.

The purpose of the following study is to study the views of representatives from different faculties of the university on significant issues that arise at the institution. The study included a variety of topics, including research management, research quality concerns, the process of raising funding, prerequisites for doing research, obstacles and mechanisms for enhancing research.¹⁶

The research revealed that the faculties in the university lack suitable financial and technical conditions for research, and in order to improve the quality of research, it is necessary to simplify the sources of funding for research, to allocate adequate time for research to academic staff, so that they are actively involved in the research process.

The study has shown that the university faculties lack suitable financial and technical conditions for research. In order to improve the quality of research, it is necessary to simplify the sources of funding and give academic staff enough time to participate fully in the research process.

3. Results

As mentioned above, in qualitative research as respondents had participated the research department heads and specialists (in sum - 15 respondents) from 10 Georgian Universities/Teaching universities, they are the field experts in higher education system.

According to the majority of the respondents, scientific-research activity is crucial and important in the activities of the university, because through the research process it is possible to maintain the continuity of knowledge, to create new knowledge or scientific literature. Additionally, research activity is significant for universities, because fosters the growth of both their academic staff and students. Besides this, the respondents noted that as universities are where science is developed, it is critical that institutions support the process of developing new knowledge. Also, it was found that research activity develops logical and critical thinking, and it is important both for the development of various areas, as well as for the formation of professionals in these fields.

It was emphasized that research activities should contribute to the development of students, the growth of the university authority, the solution of social problems, economic progress. The smallest number of respondents' answers referred to the employment of students.

The majority of respondents believed that scientific research should be based on the following values - academic honesty, validity and reliability of information, followed by academic independence and innovativeness/modernity of research.

The respondents state that Georgia is more or less actively engaged in scientific research in the humanities, natural sciences and medicine, social and political sciences, and technical sciences. However, this opinion is not based on any precise evidence, and it is only the respondents' reflection and observation. Also, based on their observations, it was revealed that scientific research in Georgia needs to be developed in the following areas - economics and business, humanities, natural sciences, modern technologies, art.

The lack of material and financial resources for the implementation of research projects at the local and international level, as well as the problem of finance, pose the biggest challenges to research activities in Georgia.

Additionally, academic staff has less time and money for research and it is difficult to recruit enough human resources for those activities. There aren't many journals in Georgia with an impact factor, which results in a shortage of scientific literature and globalization of research is rare. The respondents claimed

¹⁶ Al-Sulaiman, A., Al-muhanna, A., Abumadin, M. Research and Research Activities in a University in Eastern Saudi Arabia, Scientific Journal Saudi Medical Journal, 2002.

that it is rare in Georgia to use research results and recommendations. Universities lack clearly defined research priorities, which respondents also listed as one of the issues on the list of challenges facing research in Georgia. A challenge has also been recognized with regard to academic honesty, which involves awareness of plagiarism and overall academic diligence.

According to the majority of respondents, depending on the subject of the research, an interdisciplinary approach is necessary, which ensures the validity and reliability of the conclusions. Also, interdisciplinary research increases the scope of research and promotes the internationalization of research. According to the respondents, an interdisciplinary approach in the research process is necessary, because it determines the high quality of the research and provides very diverse information.

According to the majority of the respondents, it is necessary to promote and cover the processes of ongoing or completed research activities at the university, to introduce them to a wide audience. In the process of popularizing research, the respondents named the following media tools, the use of which can be most effective in the process of popularizing research - social networks, international online media platforms, website, and finally, traditional media tools: television, radio, magazine, etc. Most respondents agreed that an interdisciplinary approach is required, depending on the research topic, to guarantee the validity and dependability of the conclusions. Interdisciplinary research also broadens the research's scope and encourages it to become more global. According to the respondents, an interdisciplinary approach is essential for the research process because it establishes the high quality of the research and provides a wide range of data.

The majority of respondents said that in order to maintain the continuity in creating of new knowledge, it was important to engage young people in research activities. The respondents named joint collaborative student-teacher projects as a way to do this. It is desirable to have an incentive fund for young scientists, where students will be involved in scientific activities. Creation, accumulation and transfer of new knowledge to future generations are perceived as the university's main objectives by the respondents. It was also stated that the universities should train qualified professionals, contribute to the growth and development of an educated society, formation of a citizen. According to the respondents, currently, the university is facing various challenges. These challenges include the widespread devaluation of scientific activity, less interest of young people in scientific activity; researches are focused on quantity rather than quality.

The study's participants believed that the university should uphold the following essential values: knowledge and access to it, mutual respect among colleagues, evaluation and encouragement of work, academic freedom, student-centered learning, professionalism and integrity, education and development. The following values were mentioned by respondents when asked what fundamental principles a university should uphold: academic honesty and freedom, respect for knowledge, growth, openness to new knowledge, respect between faculty and students, respect for work, humanism and social responsibility, student-oriented teaching, use of personal resources, and an interdisciplinary and intercultural approach to teaching and research.

The study identified some important challenges in the field of higher education, which can be presented as recommendations in the article. The question of funding scientific research in the sphere of higher education in Georgia continues to be the most significant issue. Also, the globalization of researches in the process of development of the field of higher education is relevant, which implies the increase of opportunities at the scientific-research level, the implementation of local and international research projects and activities. The study's findings also suggest that Georgia should have more peer-reviewed scientific journals with an impact factor. Georgia also suffers from a lack of scientific publications as a result of university academics' reduced time and financial resources for study, which continues to be one of the major issues in this field.

It is significant to note that the problematic point is the issue of using the results and recommendations of studies that have already been carried out, which should contribute to the development of various areas. Finally, there is a lack of possibilities for young scientists that would encourage and advance the process of creating new scientific knowledge in our country, so it is desirable to engage the next generation in research activities.

In addition to the challenges facing higher education, the research has demonstrated that the primary function of the university in modern world is to accumulate new scientific knowledge and transfer it to future generations. It is worth noting that the results of a small survey conducted reveal that the purpose of the university is perceived to be accumulation of new knowledge, formation of professional staff for the market and promotion of civic awareness.

Conclusion

Based on the purpose of the study, it can be summarized that research activities play a very important role in higher education and mainly perform the function of creating new knowledge. Research activities contribute to the development of staff and students, the formation of a modern citizen and create a solid foundation for the development of various areas. It should be highlighted that young people are generally less interested in research activities, both locally and globally, which should become a leading priority for universities.

Also, it is critically important to use in practice the findings of previous studies for the advancement of different fields and popularize them too. The internationalization of research still remains as a challenge for many universities. It is recommended to support academic personnel in Georgia to present their scientific work at international level, e. g. in high impact factor scientific journals and international conferences.

It is worth to mention that the studies conducted at universities are integrated into study processes and new scientific and educational literature is produced as a result, that ensures the development and professional advancement of staff. Therefore it is crucial that universities encourage researchers to create new Georgian scientific literature and present it to wide audience.

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