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THE FORMATION OF RESEARCH SKILLS IN STUDENTS AS AN IMPORTANT INDICATOR OF HIGHER EDUCATION

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ABSTRACT

The higher education is an important nod of the system of continuous education which is responsible for the supply of high-skilled personnel in society. One of its main objectives is the formation and the development of research skills in future specialists. The article focuses on the importance of the scientific research in higher education, its development directions and problems and shortcomings in this sphere. Furthermore, it focuses on the impact of the organization of study process on the scientific research process. It analyzes the research results conducted in the thematic framework. It also presents recommendations directed at the elimination of the detected problems.

KEYWORDS:*Student, Scientific Research, Higher Education, Research Skills, Experience, Blended Education.*

INTRODUCTION

In the concept of the development of higher education till 2030, developing a higher education system that allows skilled and professional specialists was highlighted as one of the main strategic tasks[1]. The ability to carry out research makes up the core of the intellectual ability and the productivity of the person. The main attributes of the research potential of the researcher may include his or her ability to detect problems in a particular research sphere, to find necessary and reliable data, to work out the acquired data, to analyze and criticize them, and to apply all the gathered experience in a creative manner to solve the problem (Allayarova, 2020). The researches show that, the career perspectives of the graduates of higher education institutions largely depend on the professional qualities and skills the graduates obtained and developed during their student years.

Therefore, our objective is to discover the factors that improve our abilities to direct the students to scientific research.

Within this framework we set out following tasks:

To illustrate the advantages of the scientific research (Why students need to conduct scientific researches?);

To substantiate, that the organizational aspects of the have a positive effect on the development of research skills in students;

To illustrate the factors that have positive and negative impact on the scientific research.

The theoretical and practical significance of the research: The study of the pressing issues of directing the students to scientific researches enables us to enrich the theoretical and empirical bases of the studies in the sphere of education in Uzbekistan. The discovery of the factors, which have positive effect on the quality and the effectiveness of higher education system allows for the development of the higher education in Uzbekistan. If the students with research abilities mean the qualified professionals, it can be argued that the researchers in the sphere of education can use the materials provided in the article as methodical bases.

Methods: The materials concerning the topic of the article have mainly been studied with the use of the method of content analysis. The survey has been carried out in the bachelor's and master's students of several universities and it can be accessed at: https://forms.gle/bjYAFWDjXDEJ7WjC8

MAIN PART

The literature review: There have been numerous researches on the problem of creating ways of directing the students to scientific research. It must be noted that in Uzbekistan, such studies were mainly conducted in the framework of pedagogical and philosophical sciences. Particularly, the researches on the methodology of practical skills in the scientific activities of students have been reflected in the various academic and teaching materials of by N. A. Shermuhamedova, M. N. Abdullayeva, A. A. Azizkulov, Z. Davronov, B. Kodirov, I. Saifnazarov, G. V. Nikitchenko, and B.U. Kosimov. The use of pedagogical technologies in the teaching process and their implications in directing the students to research activity have been extensively studied by researchers, such as R. Jurayev, R. Ishmuhamedov, D. Ergashev, R. Mavlonova, B. S. Abdullayeva, Sh. Abdullayeva, H. Hudaykulov, G. Fuzailova, Y. Asadov, D. Mahmudova, Z. Ahrorova, M. Usmonboeva and others.

Among the researchers in this sphere from the CIS countries, we can mention B. I. Prujinin, O. I. Logashenko, A. M. Novikov, B. V. Petrushin who conducted researches on the effective measures of attracting the students to research activity; T. L. Shaposhnikova, L. I. Lomakina, V. V. Belova, G. N. Prozumentova, who studied the psychological characteristics of students; L. D. Stolyarenko, V. N. Mikhelkevich, N. V. Kuzmina, E. M. Mogalyuk, Y. Y. Pashokhonova, who researched the formation of practical skills of scientific activity; and V. A. Slastenin, N. A. Solovyova who studied the advanced teaching technologies and the modern forms of teaching.

Among the foreign researchers, who studied the implementation issues of the pedagogical technologies that enable the students' research abilities, we can mention V. Lamanauskas, Dalia Augienė, M. Healey, F. Caena, D. Nezvalova, S. Aaron, E. Abeyta, J. Accuosti, V. Afshar, L. Baer, J. McCormick, E. Barbera, B. Gros, L. Ivanitskaya, L. Boyes, I. Reid, K. Brain, J. Wilson, D. Brewer and others.

Out of the above mentioned researchers, the ones, on whose studies we depended upon were R. Jurayev(Jurayev, 2017), N. Shermuhamedova(Shermuhamedova, 2008), B. I. Prujinin(Prujinin, 2018), V. Lamanauskas(Lamanauskas, 2012), and Dalia Augiene(Augienė, 2015). The methodological core of our research is comprised of the notions of the above mentioned authors, such as the appearance of research abilities, the dependence the efficiency of lifelong learning on the research experience, and the motivational aspects in the direction of students to scientific research in higher education.

The advantages of the students' research activities: We must briefly define the notion of "scientific research" before describing this issue. Let us look at some definitions of the scientific research, which can be found in common materials: "The scientific research is the process of producing new knowledge and theories" (The Dictionary of Pedagogical Terms,2017), "Every scientific research is a specially organized form of cognition, in which the theoretical data about the reality is detected, acquired and structured" (Е. В. Яковлев, 2010).So, a scientific research is a search for new knowledge, a constant striving to a new goal based on the empirical facts gathered from the reality through experiment. In a narrower sense, a scientific research – is a scientific method or process of studying objects and phenomena which is completed in a work of research, such as a paper in a scientific journal or a thesis.

Generally, scientific research is an important strategical phenomenon which is responsible for the stable development of the society, and its complete formation happens in the higher education stage of the whole period of education. During the course of the higher education, each student is required to complete certain courses and to do certain forms of scientific research. As examples, we can mention independent assignments, course works, bachelor's theses and master's theses, and all of these require certain scientific research. The mentioned works are directly related to the curriculum of the higher education institution, therefore they are not considered as independent scientific researches. Students with scientific creativity demonstrate research skills by being able to turn research assignments (abstracts, term papers, Bachelor's Dissertations, Master's Dissertations, etc.) given during the performance of these tasks into a real creative process. This leads to the creation of the first manifestations of free creative research - scientific articles and theses.

Research skills are reflected in the following qualities of students:

- In-depth knowledge of the specialty;
- critical and analytical thinking (understanding the essence of events on the basis of the dialectic of cause and effect);
- Non-standard, creative thinking;
- Understanding of problems and problematic situations in the field;
- Formation of scientific problems from practical problems;
- Fearch for the necessary resources;
- Processing of found sources;
- Be able to present the acquired knowledge in a new way;
- To have a purpose in conducting scientific research;

- Responsibility and diligence;
- Order lines, efficient use of time;
- Perseverance in achieving goals, etc.

Students' research work serves to form them as creative individuals who can rationally and effectively solve emerging theoretical and practical problems. It should be noted that the availability of research skills in future professionals is one of the most important requirements for highly qualified personnel. Because as long as there is no research staff in any field, there can be no news, developments, efficiency indicators in this field (Healey, 2005). For this reason, it is important that students engage in research activities.

Among the goals of involving students in research activities in the educational process of higher education are:

- Formation of skills and competencies related to the application of theoretical knowledge in practice;
- Development of professional potential through finding scientific solutions to problems in the field;
- Creating an environment of scientific creativity as a result of scientific research;
- Meeting the needs of society in highly qualified personnel;
- Creating a foundation for the socio-economic life of the country, sustainable development, etc. on the basis of the study and assimilation of the world's best practices in the field of science.

It should be noted that research skills do not develop on their own, and in order to unleash abilities and opportunities, a purposeful learning process in higher education must be organized. We will talk about this below.

The impact of organizational aspects of the learning process on the development of research skills in students: It should always be borne in mind that the organization of the educational process is one of the primary factors influencing the development of research skills, their manifestation. In each lesson of a properly organized learning process, it is possible to develop the skills and abilities of students to engage in scientific activities. There are a number of ways and means to achieve this result. Among them, we focus on the impact of forms of organization of the educational process in higher education on research activities.

If scientific research is related to the ability of students to collect, classify, analyze, process data in the relevant field of science, and on this basis to consistently scientifically substantiate and present independent ideas, the formation of scientific skills in the educational process is achieved by designing an integrated pedagogical process. . The design of the pedagogical process is part of the preparation and implementation of the project of educational technology. That is, the teacher-educator develops a project of teaching the subject during the semester (module) based on the content of the chosen subject and the direction of the state educational standard (qualification requirements for specialties). The organization of lectures, practical and seminar classes is aimed at the development of knowledge, skills and abilities; it is important to take into account the formation and encouragement

of creativity (creative and non-standard thinking), pedagogical and professional improvisation, critical-heuristic attitude and other qualities.

The form of organization of the educational process is a feature of an integrated system between the teacher and the student, which depends on the time and place of learning, learning, self-management and development, the number of students, the purpose and content of teaching, methods and tools, results. They are divided into three major groups:

• **General** forms of organization of education.

• **External** forms of education.

• **Internal** forms of educational organization (Андреев).

The three forms of the organization of education are always interrelated, and the quality of one influences the other.

Common forms of learning organization include any communicative communication with didactic content. It is manifested in the following forms:

- Individual education;
- Reading in pairs;
- Group reading;
- Frontal training (Андреев).

The emergence and development of forms of education has a long history. While an individual form of education is effective for a particular specialty, a positive result can also be achieved through frontal training in mastering another subject or specialty. Most importantly, it is manifested in the fact that the subjects of education have sufficient knowledge and skills in choosing a specific goal, effective means of conducting research in the field.

External forms of organization of education include:

- Lecture, seminar;
- Didacticgames;
- Project-creative activity;
- Distance education;
- Scientific seminars and conferences;
- Author's technologies of teaching, etc(Андреев).

It is known that the learning process is carried out in different forms of education. The most important and general of them are lectures and seminars. In turn, the internal content and structure of lectures and seminars also differ from each other. It should be noted that the content and purpose of the above project-creative activities, independent work, seminars and conferences, didactic games are aimed at developing students' research skills and abilities.

The internal aspects of the organization of education are also important in the learning process. They are included

- Introductory session,
- Systematization and generalization of knowledge,
- practical training,
- control of knowledge, skills and abilities,
- Blended learning, etc(Vanduhe V. Z. & Hasan H. F., 2020).

Internal forms of organization of education can be called an important process that ensures the quality of teaching. The above views of the lessons enhance the content of the lesson; reflect the creative potential of teachers and students. Among the internal forms of education mentioned above, the blended form of organization of lessons - blended learning is a relatively new reality for the education system of our republic. The world's most famous universities, blended learning has been widely used for many years in most higher education institutions of developed countries. In particular, the blended organization of training after the pandemic has proven to be both economically and socially beneficial. There are many definitions of this form of teaching. Here are some of them: "Blended learning is a learning model that combines information and communication technology tools such as text, audio and video at different time intervals (synchronous, asynchronous)" (Ibrahim M. M., Nat, M., 2019). Another author describes: “Blended learning combines face-to-face and online (distance) learning methods and delivers 30-80% of the information taught to students online in the form of lectures. The remaining percentage of the study load is reinforced by face-to-face practical training at the educational institution. Therefore, this form of teaching is also called a set of blended pedagogical approaches or a mixture of didactic methods (Al-Busaidi, 2013).

In short, we consider it appropriate to organize frontal lectures in the form of blended learning, using some elements of distance learning, established during the quarantine in our country, because both teachers and students, in a sense, have developed the skills of online learning.

In general, there are many factors that influence the development of research skills in the learning process. We studied from them the cases related to the organization of education.

Opportunities created for research and existing problems: We have theoretically considered that a number of factors influence students ’ability to engage in research. Now let's look at the results of a sociological survey on this topic. A total of 480 respondents took part in the survey.[2]

The purpose of the survey is to identify opportunities for students to conduct research activities in higher education institutions, focusing on the following indicators:

- Compliance of the educational process organized at the university with the requirements of scientific research;
- The tendency of students to engage in research activities;
- The level of use of local and international scientific bases;
- Compliance with the requirements of the information resource centers of the university to conduct research;
- The level of satisfaction of students with the teacher-student (supervisor) relationship in the research process, etc.

Here are some of the results.

№	Responses	In percentages	In numbers
1	Yes	72,8	350
2	No	5,6	27
3	Depends on the situation	20,2	98
4	Difficult to answer	1,2	5

Table 1

When asked whether they liked doing research, 72.8% of respondents answered "Yes", 5.6% - "No", 20.2% - "Depends on the situation", 1.2% - "Difficult to answer".

Table 1 shows that the majority of the total respondents want to engage in research activities. This is a positive indicator. However, the presence of respondents who answered “No” with confidence indicates that there are shortcomings and problems in directing students to research activities in higher education.

The question of whether you plan to engage in scientific activities in the future is answered in the following proportions.

№	Responses	In percentages	In numbers
1	Yes, I am engaged in scientific research	26,3	127
2	Yes, I am planning to engage in scientific research	58,1	280
3	I might do scientific research	7,1	34
4	I definitely will not do scientific research	2,5	12
5	Difficult to answer	5,6	27

Table 2.

The figures in Table 2 show that more than half of the students aim to link their future to academic activity. Of the 26.3% of respondents who answered “I am engaged in scientific activities”, 95% are master's degree students. The remaining 5 percent falls on the undergraduate stage. However, the presence of students (2.5 percent) who decided not to engage in academic activities should also not be overlooked.

The following answers show that the correct organization of the educational process in higher education has a positive effect on students' goal setting for future research.

№	Responses	In percentages	In numbers
1	The proper organization of the educational process in higher education institution (high technical support, faculty with strong scientific potential, etc.)	32,6	157
2	The proper coverage of the discipline by the faculty of the higher education institution	27,6	133
3	Teaching that one can achieve life-goals through science with personal examples	21,8	105
4	Emergence of scientific ideal in students	6,8	33
5	Positive scientific-educational	6,4	31
6	Difficult to answer	4,4	21

Table 3

To the question "What do you think is the strongest factor influencing students' interest in research activities?" 32.6% of respondents answered that the educational process in the university is properly organized, 27.6% said that the subject is well explained by professors and teachers, 21.8% said that it is possible to achieve life goals through science based on personal examples, 6.4% “Positive scientific and educational environment in higher education”, 6.8 percent “Emergence of scientific ideal in students”, 21 respondents (4.4 percent) identified the difficult option to answer.

The next question asked the students to be aware of the activities of the Youth Academy, which was established to support scientific and innovative activities in the country.

№	Responses	In percentages	In numbers
1	Yes, I am a member of the Academy	4	19
2	Yes, I have read about it in social media	39,8	191
3	No, I have not heard about it before	53,3	270

Table 4

Respondents were asked, "Are you familiar with the activities of the Youth Academy of the Ministry of Innovative Development?" students answered in the following ratio. It should be noted that the results are not good. Because of the 480 students, only 19 confirmed that they were members of the Youth Academy, while 270 respondents said they had never heard of it. In a sense, this indicates that the activities of the Youth Academy of the Ministry of Innovative Development are not sufficiently important among students.

№	Responses	In percentages	In numbers
1	Conference paper	32,3	155
2	Paper in a e-journal	19,4	93
3	Paper in a Journal Registered by the Higher Attestation Commission of the Republic of Uzbekistan	14,4	69
4	Paper in a Journal registered in Scopus and Web of Science scientific research databases	6,7	32
5	Pamphlet / Brochure	6	30
6	Monograph	3,8	18
7	I have not published any scientific works	54,2	260

Table 5.

In Table 5, The answers to the question “What scientific papers have you published so far?”are reflected. Of the 480 respondents, 260 had not published any scientific papers. If we take into account that the majority of respondents are undergraduate students, this figure can be assessed as satisfactory. But exactly 54.2 percent is critical. Therefore, in the process of mastering the subject, students should be directed to write small scientific papers. When calculating the ratio of indicators in this table, it should be noted that the respondents identified several response options. This is because the research papers published by a single respondent may include both a conference article and a Journal article registered in the Higher Attestation Commission of the Republic of Uzbekistan journal article, among others (these figures will be reflected in subsequent analyzes).

№	Responses	In percentages	In numbers
1	www.natlib.uz	10	48
2	www.lex.uz	29,8	143
3	www.scholar.google.com	27,7	133
4	www.dissercat.com	11	53
5	www.cyberleninka.ru	6.5	31
6	www.scopus.com	12,1	58
7	www.elibrary.ru	13,1	63
8	www.koob.ru	4,2	20
9	www.publons.com	1,7	8
10	www.researchgate.net	4,8	23
11	www.ziyo.uz	49,7	237
12	I did not refer to the websites listed	28,1	135

Table 6.

In Table 6 answers to the question “Which of the following electronic platforms do you use when writing a research paper?” are reflected. 45.7% of respondents confirmed the use of the national site www.ziyo.uz, 29.8% of students www.lex.uz. However, the use of reputable foreign scientific databases is low, in particular, only 8 respondents use the services of the Web of Science database www.publons.com. In addition, 135 respondents (28.1 percent) confirmed that they did not visit the listed sites at all. The question arises - did the professors and teachers tell the students that the use of such electronic scientific publications and databases during the educational process is convenient and useful in all respects, as well as the requirements of the time? To answer this question, professors should be asked the same question.

In general, empirical research has shown that there are a number of problems that need to be addressed in the system. Here are the most important of them:

- Respondents have a desire to engage in research, but do not have sufficient knowledge and imagination about the content of research, the requirements for it;
- Low level of use of scientific resources in Russian and other foreign languages;
- Unsatisfactory orientation of students to research activities by professors and teachers in the educational process;
- There are students who can not distinguish between electronic scientific databases and social networks;
- Most students are not economically independent;
- Disappointment, lack of motivation was observed in most responses;
- Involvement of professors and teachers who do not have sufficient scientific potential in the educational process, etc.

CONCLUSIONS

In general, directing students to research is one of the main tasks of higher education. Unfortunately, the delays in applying the world's best practices in education to the national education system prevent

higher education graduates from becoming highly qualified personnel. In our country, educational documents are formalized at the required level, but the mechanisms for their application in practice are not sufficiently developed.

If the organization of the educational process in higher education is set up correctly, both the spiritual and enlightenment environment, the quality of education and the qualifications of graduates will be high.

Therefore, first of all, in this article we urge all students studying in higher education to become "researcher-student". Because the research ability of an individual leads to the creation from nothing, to the perfect development of the whole. In addition, engaging in research increases a student's opportunities for self-awareness, development, and nurturing.

Based on the research and empirical evidence, we propose to pay attention to the following in the activities of higher education institutions:

- To provide students with a sufficient understanding of research activities from the 1st year of the bachelor's degree, if necessary, to include in the curriculum or coaching hours the necessary hours for the organization and conduct of research activities in higher education;
- Regular support of research activities, comprehensive motivation to conduct research;
- Development of foreign language skills, in particular, Russian;
- Full development of mechanisms for the implementation of models such as flipped classroom, blended learning in the educational process;
- Improving the material and technical capacity of universities to conduct research (these opportunities can also be achieved through the winning of grants by the teaching staff);
- Improving the financial capacity of students on the basis of universities, the opening of production and service enterprises, which will lead to economic independence;
- Recruitment as a paid member of state grants in order to fully support the research activities of students, etc.

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