



THE ROLE OF YOUTH IN SCIENTIFIC DEVELOPMENT

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<https://doi.org/10.5281/zenodo.15264461>

ARTICLE INFO

Qabul qilindi: 29-yanvar 2025 yil

Ma'qullandi: 10-fevral 2025yil

Nashr qilindi: 15-fevral 2025 yil

KEYWORDS

young scientists, research, innovation, scientific progress, education, technology.

ABSTRACT

In the quickly changing world of today, young people are playing an ever-more-important part in scientific advancement. The impact of young researchers on technical breakthroughs, their involvement in creative endeavors, and their contributions to scientific progression are all examined in this work. The study analyzes the elements influencing young people's involvement in research using expert interviews and a survey of the literature. The results show that young scientists are essential for fostering creativity, and that giving them greater chances advances science.

INTRODUCTION

Scientific innovation has always played a significant role in the advancement of society, influencing technological breakthroughs, healthcare systems, and economies. Scientific advancements have raised human living standards, transformed industries, and offered answers to difficult global problems throughout history. With the speed at which technology and knowledge-based economies are developing in the current period, youthful researchers are more important than ever to the advancement of science. Young scientists' original ideas, creative thinking, and novel methods can significantly promote scientific and technological growth. Across the globe, young researchers' ideas are becoming widely recognized in a variety of sectors, including biotechnology, ecology, artificial intelligence, and current technology. Young scientists are supported by a number of programs in Uzbekistan, such as innovation centers, startup programs, and scientific grants. This process still faces several obstacles, though, including the need to increase young researchers' passion for scientific inquiry, the lack of infrastructure and money for scientific study, and the hurdles of putting scientific discoveries into practice. The purpose of this project is to examine how youth contribute to scientific advancement and to determine practical methods for boosting youth participation in research. It looks at the things that influence young people's interest in science, the difficulties they encounter, and possible ways to get past these barriers. In order to suggest strategic measures for increasing young people's involvement in science, advanced scientific-practical methodologies and global experiences are also analyzed.

LITERATURE REVIEW

Young people are vital to society's intellectual and technical advancement, according to study on their contribution to scientific advancement. Young scientists' contributions to societal growth through creative ideas, startup enterprises, and research activities are widely examined in international scientific literature. For instance, R. Florida (2002) popularized the idea of the "creative class," highlighting the ways in which youth impact the advancement of

society by utilizing scientific and technological advancements. Similarly, scientific advancements and information are important components of a nation's development, according to P. Romer's theory of economic growth. Studies on boosting young people's interest in science have also been carried out locally. O. Turayev (2021), an Uzbek scholar, looked at the patterns in the growth of scientific startups in Uzbekistan and offered suggestions for improving their efficacy. Supporting young scientists has also received particular attention from state initiatives like the "New Uzbekistan – New Ideas" program, which aims to advance research and education.

A survey of the scientific literature indicates that encouraging young people to participate in scientific research requires establishing the required framework, increasing the availability of funding sources, and guaranteeing the usefulness of research results. International experience shows that industrialized nations have put in place mechanisms to help young scientists through grants, innovation centers, and university-industry collaboration. There are still a number of issues that need to be resolved, notwithstanding Uzbekistan's noteworthy efforts in this area. For this reason, embracing contemporary methods and researching best practices are essential to boosting the participation of young scientists in research.

RESEARCH METHODOLOGY

The purpose of this project is to examine how youth contribute to scientific advancement and to determine the most efficient ways to involve youth in research. Qualitative and quantitative data gathering and analysis approaches were combined in a mixed-methods approach. There were multiple important phases in the research process. To determine the socioeconomic variables impacting young people, the factors influencing their engagement in scientific activities, and best practices in the field, the first stage involved reviewing pertinent scientific literature from both local and international sources. Surveys of university students and aspiring researchers were used to gather empirical data in the second stage. These questionnaires investigated the reasons behind their participation in academic activities, the difficulties they encounter, and their motivation in scientific research. To learn more about the experiences, difficulties, and recommendations of young scientists employed in research facilities and universities, interviews were also undertaken. Their input served as the basis for evaluating the effectiveness of the current system. In order to assess the results of young people's involvement in scientific initiatives and examine their participation, the study also used an experimental observation method. In order to create efficient systems for involving young people in scientific activity, the gathered data was processed utilizing statistical and analytical techniques. Additionally, a case study methodology was employed to contrast Uzbekistan's current state of affairs with international best practices. This method assisted in identifying the obstacles that young researchers have when conducting scientific research and offered ways to get past them. Consequently, a methodical strategy and useful suggestions were created to increase youth participation in scientific research.

ANALYSIS AND RESULTS

The results of the study show that a number of important aspects, such as the availability of research conditions, institutional and financial support, and the degree of motivation of the young people, influence their involvement in scientific advancement. The majority of young people profess interest in scientific research, according to survey results, but they struggle greatly when it comes to moving into practical activity. The most frequent problems include inadequate financial and technical support for research, inadequate mentorship from scientists, and administrative obstacles to putting research results into reality. According to statistical analysis, young researchers who have taken part in startup programs and scientific funding typically produce better outcomes and see their findings put into practice faster. at

particular, young scientists and students employed at university research labs and innovation centers were more productive and had a higher chance of publishing their research in scholarly journals. Furthermore, a review of global experiences reveals that industrialized nations have placed systems in place to support and engage young scientists in applied research. Effective university-industry partnership arrangements, for instance, exist in the US, Germany, and Japan, allowing young researchers to relate their scientific work to practical applications. Uzbekistan, on the other hand, continues to struggle in this field since the work of many young academics is still primarily theoretical and does not successfully translate into real-world application. Based on the analysis, a number of important suggestions were made to increase the number of young people participating in scientific activities. These included strengthening university-industry collaboration, creating innovation centers and startup incubators for young researchers, improving mentorship and scientific leadership programs, and broadening the system of research grants and financial support. It is anticipated that these steps will speed up the application of research discoveries in the actual economy and spark a greater interest in science among young people.

Summary of Key Findings in a Table Format

Faktor	Challenges Identified	Proposed Solutions
Funding and Resources	Limited financial support and research infrastructure	Expansion of grant programs and research funding
Academic Guidance	Insufficient mentorship and supervision	Strengthening mentorship programs and research collaborations
Bureaucratic Barriers	Complex approval processes for research application	Simplifying administrative procedures for scientific projects
Industry Collaboration	Weak connections between academia and industry	Enhancing university-industry partnerships
Innovation and Startups	Lack of incubators and support for young scientists' projects	Development of innovation centers and startup incubators.

By addressing these challenges and implementing the proposed measures, it is expected that young scientists will be more actively involved in research, leading to greater scientific and economic advancements.

CONCLUSION

The results of the study show that young people's involvement in scientific advancement is crucial to society's intellectual and technological advancement. Favorable conditions must be established, and institutional and financial support mechanisms must be strengthened, in order to foster scientific endeavors and include youth in research. Lack of research grants, inadequate supervision from academic supervisors, inadequate technical infrastructure, and obstacles in putting scientific breakthroughs into practice are some of the issues the study uncovered. The following suggestions are put forth in order to address these issues: First and foremost, in order to give young scientists more chances to do research, research grants and

startup programs must be expanded. Second, in order to give new researchers direct access to seasoned scientists, mentorship programs had to be established. Third, the work of young researchers will be more productive if research labs and technology parks are expanded and furnished with contemporary equipment. Fourth, enhancing university-industry cooperation will facilitate the incorporation of scientific advancements made by young researchers into the actual economy. Scientific advancement can also be accelerated by growing international scientific collaboration, giving young scientists more chances to travel abroad, and creating a creative ecosystem. These actions will encourage young people to engage in scientific endeavors and help put their creative ideas into practice. Therefore, making good use of the scientific potential of young people would assist advance the nation's scientific sector and support sustainable development.

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