

Science and Education in Azerbaijan: Are We Advancing or Regressing?

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In January of this year, President Ilham Aliyev gave an interview to local television channels. Responding to the journalist's question, "How do you assess the state of science and education in the country?" Aliyev spoke about the ten higher education institutions established over the past 20 years, the quality of education, the social protection of teachers, and the enhancement of professionalism. Overall, he [expressed](#) satisfaction with the changes in science and education during his tenure and voiced confidence that the reforms undertaken would yield positive results. Approximately two weeks prior to the president's interview, the Minister of Science and Education, Emin Amrullayev, stated that "the title of scientist must be protected from pseudo-scientists," noting that granting academic titles to individuals who do not merit them would not produce [positive outcomes](#). A few years earlier, Amrullayev had also [addressed](#) the general condition of both secondary and higher education, emphasizing that approximately 60% of individuals over the age of 25 in the republic do not understand what they read. Such contradictory statements regarding science and education in Azerbaijan inevitably raise the question of who is telling the truth. Whose assessment is justified? President Aliyev, who asserts that science and education have progressed during his rule, or Minister Amrullayev, who suggests the opposite?

In fact, answering this question is not particularly difficult. There are well-established benchmarks globally that can speak to the development of science and education, as well as concrete criteria used to measure their quality. Drawing on reports from international organizations and the findings of

academic research conducted in this field, we will seek to determine who is telling the truth regarding the state of science and higher education in Azerbaijan.

A Priority Area of Government

Science and education are closely intertwined with any political authority. The government supports the establishment and financing of scientific and educational institutions and, in some cases, is directly involved in their governance. For this reason, the factors influencing the development of science and education can be divided into two groups: institutional and instrumental. Institutional factors include the nature of political power and the policies regulating the relationship between the state and scientific and educational institutions. Instrumental factors, by contrast, refer to the professional capacity of those working in these institutions, the relevance of the research conducted, and the extent to which it meets broader developmental demands.

In the modern world, all forms of development are grounded in fundamental freedoms.[\[1\]](#) The viability of these freedoms depends on the character of political authority. In states where fundamental freedoms (freedom of thought, expression, belief, etc.) are protected, broad opportunities emerge for the advancement of science and education; where these freedoms are not ensured, the opposite process unfolds. In the interview cited above, the President of the Republic of Azerbaijan noted that the technologies used in oil-rich states were not invented within those states themselves but originated from technological centers elsewhere. However, the president did not mention that these technological centers are located in Western countries, nor that the West's transformation into a hub of innovation is closely linked to the existence of fundamental freedoms. Numerous studies confirm that democratic and meritocratic regimes have a positive impact on national innovation indicators.[\[2\]](#) This is made possible by the implementation of diverse socio-economic

programs in democratic systems, the ability to approach problems in research and development (R&D) from the perspectives of various interest groups, and the achievement of reciprocal socio-technical development.[\[3\]](#) Democratic regimes also foster the integration of different civil society groups, enabling their voices to be heard and allowing them to participate in resolving political issues and shaping knowledge—thereby stimulating progress in R&D.[\[4\]](#)

One of the most important factors influencing the development of science and the quality of education in research institutions and higher education establishments is the level of academic freedom. Academic freedom is defined as the ability of a specialist to choose their own research problem, to conduct research without external interference, and to teach a subject from their own professional standpoint.[\[5\]](#) In this sense, academic freedom goes beyond mere freedom of speech; it encompasses a broader set of rights, including fundamental freedoms, equality, and the right to participate freely in scientific discussions and debates without state control or any form of institutional censorship.[\[6\]](#)

International organizations and research institutes that assess levels of academic freedom across countries rely on five key criteria. These include freedom to conduct research and teach; freedom of academic exchange; institutional autonomy of universities; academic integrity, fairness, respect, and responsibility; and academic and cultural freedom of expression. According to the V-Dem Institute's 2025 report, academic freedom in Azerbaijan is among the lowest in the world. In terms of academic freedom, Azerbaijan lags significantly behind neighboring Armenia and Georgia. In these reports, the Academic Freedom Index is measured on a scale from 0.0 to 1.0. In the Institute's 2024 report, the index was recorded at 0.0 for Azerbaijan, 0.2 for Russia, 0.7 for Armenia, and 0.8 for Georgia.[\[7\]](#) This indicates that the five core criteria essential to academic freedom are not ensured within Azerbaijan's scientific and educational institutions.

Given the high degree of centralization and institutionalization of science and education in Azerbaijan, it is effectively impossible to guarantee freedom in research and teaching. In Azerbaijan's scientific and educational institutions, research topics and directions, as well as dissertation subjects, must be approved and registered by bodies known as scientific councils and coordination councils. Researchers select topics from lists provided to them, and academic supervisors are appointed upon the recommendation of these bodies. Although the composition of scientific and coordination councils is formally meant to be elective, this rule is not followed in practice; council members typically consist of individuals holding senior positions within the respective research institution. In research institutes, these include members of the institute's leadership and department heads, in higher education institutions, university administrators and department chairs. Since scientific and educational institutions in Azerbaijan lack institutional autonomy—and university rectors and institute directors are directly appointed by the President of the Republic—it becomes easy to suppress freedom in research and education.

Another indicator of the high degree of centralization in science and education in Azerbaijan concerns the awarding of academic titles and degrees. In Azerbaijan, the authority to confer academic degrees does not rest with research institutes or higher education institutions. Instead, this function is performed by the Higher Attestation Commission under the President of the Republic of Azerbaijan. When Minister Amrullayev speaks of "pseudo-scientists," he is referring precisely to those individuals who have been granted academic degrees and titles by this body. In other words, in Azerbaijan, fraudulent academic titles are awarded by an institution operating under the direct authority of the president. Free academic exchange is further constrained by university and research institute administrations, as well as by an entity known as the Internal Control Department, which

operates under the State Security Service. Academic and university staff must obtain permission from university leadership in order to participate in scientific conferences or international research projects. Even then, participation is permitted only after the Internal Control Department verifies that the subject matter of the conference or research aligns with the political course of the country's leadership.

Azerbaijani specialists are also deprived of the opportunity to present the subjects they teach from their own professional standpoint. There are several reasons for this. First, all university curricula follow a unified structure and content, meaning that subjects must be taught in the same standardized manner, regardless of the instructor's professional perspective. Second, university faculty make only limited use of the scientific achievements of leading international scholars in their respective fields. This is due to restricted access to electronic resources, the high cost of scientific publications reflecting the latest research developments, the weak integration of Azerbaijani scholars into the international academic community, insufficient proficiency in English (the primary language of contemporary science), and the fact that research findings and interpretations may contradict prevailing Azerbaijani realities. This issue is particularly evident in the social sciences and humanities, such as economics, history, and political science. Since the assessments of international organizations and research institutes regarding Azerbaijan's economic situation, political governance, and related challenges do not correspond to the narratives promoted by the Azerbaijani authorities—and personally by President Aliyev—concerning economic success, political stability, multiculturalism, and tolerance, referencing such sources becomes effectively impossible.

The installation of surveillance cameras in university lecture halls enables the monitoring and inspection of professors' lectures. Additionally, informant practices (the submission of denunciations to the university leadership and specifically to

the Internal Control Department) are widespread among both students and faculty. This points to the absence of genuine academic freedom of expression. Taken together, these conditions make it difficult to assume that principles such as integrity, fairness, respect, and responsibility are upheld within Azerbaijan's academic environment.

The third major factor influencing the quality of science and education is, of course, funding. In the contemporary era of advanced technological development, scientific research and high-quality education require substantial financial resources. In the country led by a president who, in his interview, stated that "the development of countries depends solely on intellect, intelligence, education, and science," public expenditure allocated to education amounts to 3,5% of GDP, while spending on science stands at 0,5% of GDP.[\[8\]](#) Even during the Soviet period, expenditures allocated to renovation and construction work in Azerbaijan's higher education institutions exceeded spending on science several times over, and the country's institutes resembled construction enterprises more than centers of science and education.[\[9\]](#)

Thus, we arrive at the conclusion that the institutional conditions necessary for the development of science and education in Azerbaijan are not being ensured. Nearly all of the institutional conditions affecting the quality of science and education are, in one way or another, linked to the president. It is the president who approves the state budget, appoints the heads of research institutes and universities, and oversees a body that operates directly under his authority in awarding academic titles and degrees. How, then, does the absence of adequate institutional conditions affect the instrumental conditions that determine the quality of science and education?

The Quality of Science and Education: High Professionalism or Pseudo-Productivity?

As in the rest of the world, researchers and faculty members working in research institutes and universities in Azerbaijan submit annual reports on the research they have conducted during the academic year. In these reports, the primary indicator of academic performance is the number of published articles and participation in scientific conferences. However, there is an important factor to consider. Beyond the sheer number of publications, the quality of the journals in which they appear is crucial. Articles published in indexed journals included in databases such as Scopus, Thomson Reuters, and Web of Science receive significantly higher evaluation scores.

A review of reports from specialists working in Azerbaijan's research institutes and universities reveals that the number of published articles is relatively high. However, only a small proportion of these articles appear in indexed journals. Such journals typically require positive peer reviews from at least three experts in the field before recommending an article for publication. To meet these standards, articles must demonstrate originality, maintain objectivity, reflect scientific achievements obtained through modern technologies, and possess practical relevance. Since many studies conducted by Azerbaijani scholars fail to meet these requirements, their work is often published in predatory journals.[\[10\]](#) In many cases, these publications cannot be regarded as genuine scientific articles, as they largely consist of compilations—text assembled from various sources. In order to satisfy administrative demands imposed by institutional leadership, scholars are often driven toward misconduct, compromising academic ethics in the process.

There are numerous reasons for this situation within Azerbaijan's academic environment, and nearly all of them stem from the failure to ensure the institutional conditions necessary for maintaining quality in science and education. In the natural sciences (physics, chemistry, biology, etc.), laboratories are frequently ill-equipped for modern scientific research, and financial resources are insufficient. Much of

the equipment available in Azerbaijan's research institutes is incapable of addressing the pressing scientific challenges of the twenty-first century. Another factor is the shortage of specialists capable of working in laboratories equipped with modern technology. The current level of higher education in Azerbaijan does not adequately prepare such professionals.

In the social sciences and humanities (economics, political science, international relations, etc.), the lack of original research is closely related to issues of objectivity. Many potential research findings in these fields would not align with the political, social, and economic narratives promoted by President Aliyev and could therefore be deemed politically unreliable by institutional leadership. Under such conditions, scholars are often compelled to abandon academic integrity, objectivity, and professional ethics. Rather than prioritizing publication in indexed journals, they turn to predatory journals, effectively sacrificing academic credibility for political loyalty.

Another important criterion for assessing the quality of scientific research is its innovation value. To evaluate Azerbaijan's performance in this area, it is sufficient to consult the reports of the World Intellectual Property Organization (WIPO). According to the organization's 2024 report, Azerbaijan ranks 95th out of 133 countries in the Global Innovation Index (GII), and 17th out of 18 countries in the North Africa and West Asia region.[\[11\]](#) Neighboring Georgia ranks 57th and 7th respectively.[\[12\]](#) Between 2020 and 2024, Azerbaijan has declined in both its overall GII ranking and in innovation inputs and outputs. Experts often link the success or failure of states in science, technology, and innovation to the level of freedoms, social equality, and public participation. In democratic regimes, broader freedoms help prevent social inequality and expand opportunities for diverse social groups to participate in socio-political processes. This, in turn, fosters free competition and collaboration, creating conditions conducive to economic flourishing.[\[13\]](#)

Table 1: Azerbaijan's Global Innovation Index (GII) Indicators, 2020–2024 [\[14\]](#)

Years	GII Rank	Innovation Output	Innovation Result
2020	82	72	86
2021	80	74	91
2022	93	79	110
2023	89	76	104
2024	95	82	101

Innovations are widely regarded as a fundamental driver of economic development. In societies based on a free market economy, economic growth tends to be faster, as freedom accelerates innovation. [\[15\]](#) The more innovations are developed and implemented, the more advanced and productive the economy becomes, and the more rapidly and effectively social problems can be addressed. [\[16\]](#) This suggests a direct relationship between societal welfare and the quality of science and education.

In the modern world, the production and application of advanced scientific knowledge, as well as the generation and implementation of innovative outcomes, are impossible without international cooperation and the exchange of scientific knowledge. For this reason, one of the key instrumental criteria affecting the quality of science and education is international scientific collaboration. Such cooperation requires the participation of researchers in international scientific projects and the internationalization of research institutes and higher education institutions. Over the past 15 years, however, the participation of Azerbaijani universities and research institutes in international projects has significantly declined. This decline is largely attributed to obstacles created by the leadership of science and education institutions, including restrictions on specialists' participation in international projects and limited institutional support for global academic engagement.

Participation in scientific conferences is considered one of the key indicators of the quality of academic performance among staff working in research institutes and higher education institutions. Institutional leadership, as well as the Supreme Attestation Commission responsible for awarding academic degrees and titles, places greater emphasis on participation in international conferences than on domestic ones. However, the requirement that specialists obtain permission from higher authorities in order to attend conferences makes the evaluation of this performance indicator dependent on the will of institutional leadership.

Participation in scientific conferences also requires financial resources. In many cases, researchers must pay registration fees and/or cover the costs of physical attendance. Although the budgets of research institutes and universities formally allocate funds for participation in conferences, seminars, and other professional events, access to these funds is limited, and not all employees enjoy equal rights in obtaining them. Institutional leaders distribute these resources at their personal discretion. This is made possible by the fact that they are not accountable to their academic communities. Since they are appointed by the president, they are accountable only to him. Another contributing factor is the lack of financial transparency in the operation of research institutes and universities. This absence of transparency is directly linked to the lack of institutional autonomy, which allows all financial decision-making to be concentrated in the hands of rectors.

Taking the above into account, it can be argued that the instrumental conditions necessary for improving the quality of science and education in Azerbaijan are also absent. Under such circumstances, it becomes possible to state that the president's claims regarding the level of science and education in Azerbaijan are far from reality. The low quality of science and education in the country will create serious challenges for future generations. The present quality of

science and education is a decisive factor shaping the future productivity of the population.

These concerns are confirmed by the figures presented in the Azerbaijan Human Capital Review 2023, prepared by a World Bank research team with financial support from the European Union. According to the report, a child in Azerbaijan who reaches the age of 18 will realize only 58% of their potential productivity. For comparison, the corresponding figure in Europe and Central Asia is 63%. In Azerbaijan, one in five children at the age of five suffers from developmental delays, and one in four children at the age of ten cannot read proficiently. Only 35% of children aged 5–6 are enrolled in preschool education. The majority of 15-year-olds perform below average in reading (60%) and mathematics (51%). Furthermore, 25% of the population aged 10–24 suffers from food insecurity. Among girls aged 15–24, 35% are neither in education nor in employment after leaving school.[\[17\]](#) These figures provide a clear picture of the state of the country's economy and social welfare, both of which are directly dependent on the quality of science and education.

Conclusion

Since the collapse of the Soviet Union, all significant developments in Azerbaijan have been evaluated by society in comparison with the Soviet period. In independent Azerbaijan, the state of science and education lags behind that of the Soviet era. Contemporary society believes that during the Soviet period, education was of higher quality and science was more advanced. When the situation in primary, secondary, and higher education is discussed, society primarily blames teachers and ministers. For this reason, Misir Mardanov, who served as Minister of Education for a long time, was previously the target of criticism, and currently this target is Emin Amrullayev. However, the conditions and factors that determine the quality of education in the country are not set by teachers, and the education strategy is not determined by

the education ministers. Teachers and ministers act as servants of the authorities, conveying its directives to society and executing its orders. Science and education are considered a priority area for the government and a highly significant state infrastructure. This is because the authorities use education to instill their political ideology in the younger generation, aiming to shape them into politically reliable citizens. In his referenced statement, Emin Amrullayev speaks about fake scholars, but in reality, he indicates that the situation regarding science and education is not his responsibility, and that he is not to blame.

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[11] *Azerbaijan ranking in the Global Innovation Index 2024*. Global Innovation Index 2024. 1-4.

[12] *Georgia ranking in the Global Innovation Index 2024*. Global Innovation Index 2024, 1-2.

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