

Report on SDG 8. Decent Work and Economic Growth for 2023

A priority task of the human capital development policy is the preservation and enhancement of the intellectual potential of the leading scientific and engineering schools of the university.

To establish a human capital management system and develop mechanisms for assessing needs and forecasting personnel potential growth, there were implemented events to improve the assessment tools for both individual employee performance (Faculty Rating) and the effectiveness of university departments (Department Categorization) in 2023, as well as the assessment tools for the competitiveness of implemented educational programs at the bachelor's, specialist, and graduate levels (Program Rating). For this purpose, the following changes were made to the KPI calculation methodology in 2023:

1. **Faculty Rating:** The block of indicators characterizing faculty participation in project-educational activities was substantially modified. A number of indicators were added to evaluate the qualitative aspects of faculty involvement in the implementation processes of project-based learning. Criteria were established to assess the supervision of state final thesis defenses in the "Startup as a Thesis" format. Since the building of the new educational model is based on the implementation of a digital platform, an indicator was included to evaluate the faculty's activities in developing pilot projects of educational programs realized on this platform (competency model, curricula, course programs, educational modules, Federal State Educational Standards, etc.).

2. **Program Rating:** A block of indicators was introduced to assess the scientific potential of the department staff implementing educational programs, as well as student involvement in research and development activities.

In order to provide starting positions in science for young talented researchers, a system has been established and developed to attract talented graduates of master's and specialist programs to the postgraduate studies at Samara Polytech. The components of this system include:

1. **Optimization of the structure and content of master's and postgraduate educational programs**, including the implementation of a seamless education mechanism "academic master's – postgraduate" in the university's priority areas. The integration principle of the master's and postgraduate programs includes: unification of the list and structure of mandatory university-wide modules in the master's curricula; approval of the topics of master's theses and scientific supervisors for master's students within one month from the start of studies; approval of master's thesis topics considering their dissertation potential and the possibility of continuing research in postgraduate studies; and the advanced mastery of the educational components of postgraduate programs in the master's program with subsequent credit transfer. As part of the trial of the proposed mechanism, a group of 146 master's students was formed in the Electrical Engineering Faculty of Samara Polytech in 2023.

2. **Development of a new mechanism for organizing the educational process** – a project-based approach ensures a combination of innovative, research, and educational activities of students within the course "Innovation Workshop." The effectiveness of this format of education lies in its ability to develop skills in independent problem-solving, self-development, self-presentation, organization of collective team work, and applying theoretical knowledge to practical tasks. In 2023, over 2,500 students and young scientists participated in various scientific events, including 388 individuals who received awards for victories in research competitions, exhibitions, and scientific conferences; 5 became winners of the regional competition "UMNIK"; 25 won the regional competition "Young Scientist"; 16 won the competition for young scientists and designers in the Samara region; and 5 students received

grants from the President of the Russian Federation from the "Talent and Success" foundation in the area of "Science."

3. Implementation of new forms of organizing project and research activities for students. The aim of this modification is to enhance fundamental training and engage students in real project work within R&D as part of interdisciplinary project groups. One such mechanism is scientific mentoring of students by postgraduates and young scientists within the framework of Russian Foundation for Basic Research grants and initiative themes carried out in the "SSTU Project Exchange" system. In 2023, 62 projects were successfully implemented on the Project Exchange. In the reporting year, 1,728 students were involved in research activities, and 156 students and young researchers participated in scientific project implementation with remuneration. For their achievements in research and innovation activities, including publication activity, 243 students were awarded in the reporting year.

4. Development of the practice of forming and promoting research groups led by young scientists. In addition to the established and actively developing youth laboratories "Advanced Materials and Technologies of Hydrogen Energy" and "Digital Twins of Materials and Technological Processes," created as part of the national project "Science and Universities," a new youth laboratory, "Development of Scientific Foundations for Low-Carbon Hydrogen and Graphite Production Technology from Hydrocarbon Gases," will be opened. The project was highly appreciated by experts of Russian Academy of Sciences. The project financing is planned for 2024 through the national project "Science and Universities".

	Indicator	Unit of measure	2023 r.	
			plan	fact
1	Number of academic staff who have undergone advanced training and professional retraining	per.	495	608
2	The proportion of postgraduate students who defended their dissertations on time and within a year after graduation	%	41	60
3	The number of young scientists and students involved in the research activities on a fee-paying basis	per.	140	156