

Sofia, Bulgaria: ROBO STEAM ACADEMY project launch event

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The education of the future is taking shape with an innovative new project that focuses on integrating robots and STEAM technologies into the educational process for students and teachers in vocational and technical education (VET) field.

The ROBO STEAM ACADEMY (Project ID: 2024-1-BG01-KA220-VET-000256580), funded under the Erasmus+ program, aims to create,

test and disseminate the know-how needed for robo-STEM teaching, both in the classroom and in a network of Robo STEM Academies designed to support technology-based extra-curricular activities.

On 26-27 November 2024, the official launch of the ROBO STEAM ACADEMY project, an Erasmus+ initiative in the VET field through which partner organizations from Bulgaria, Romania and Slovakia (competence centers, technology institutes, universities, NGOs and technical education institutions) aim to use the potential of robots and STEAM (Science, Technology, Robotics, Engineering, Arts and Mathematics) methodologies as educational and edutainment platforms to boost the STEM skills and competences of VET students, teachers and technology groups.

The project is based on the partnership between INSTITUTE OF INFORMATION AND COMMUNICATION TECHNOLOGIES, Bulgaria, TECHNICKA UNIVERZITA V KOSICIACH, Slovakia, Stredna priemyslna skola elektrotechnicka, Slovakia, Asociatia Nationala a Bibliotecarilor si Bibliotecilor Publice din Romania, Romania, and Liceul Tehnologic "Cezar Nicolau", Romania.



An integrated approach for sustainable results

The project aims to create the synergy and diversity needed to create and pilot inclusive STEM-focused educational innovations in Europe. Through their activities, the ROBO STEAM ACADEMY partners will provide students and teachers with ready-made STEM projects and supporting tools that they can use to teach and learn STEM subjects with the help of robots.



The project team will create an advanced web-based game, while a specially appointed jury will be responsible for organizing international online robo-STEM competitions, robo-STEM lessons and a toolkit for teachers, as well as an edu-hub and a robo-STEM community of practice to facilitate educational innovations and inclusive digital transformation in VET in the 3 partner countries, but also in Ukraine and North Macedonia, as well as across the European Union.

ROBO STEAM ACADEMY: a welcome bridge between edutainment and technology education

The ROBO STEAM ACADEMY project started implementation on October 1, 2024 and will end on September 30, 2027. The main objective of the project aims to improve VET education in STEM fields. Through its intellectual deliverables the project will equip teachers, trainers and technology communities with high-quality, ready-to-use educational robo-STEM content for classroom and extra-



curricular activities, supported by an extensive network of technical specialists, teachers, tutors, in a cooperative and co-creation based environment.

An innovative European project, building on the success of the previous Erasmus+ initiative, NITRO Clubs Erasmus+, ROBO STEAM ACADEMY project promises to transform the landscape of vocational and technical education (VET) by introducing robots as essential educational tools in classrooms and extracurricular activities. The new Erasmus+ initiative aims to create, test and disseminate modern ways of teaching

robo-STEM concepts. These extra-curricular activities not only complement traditional education, but bring to the forefront the edutainment potential of robots and cyber-physical systems. VET students will thus have access to advanced STEM projects, interactive platforms and engaging educational materials aimed at bridging the gap between traditional robotics and current STEM developments.

ROBO STEAM ACADEMY - an extended network for educational innovation



The ROBO STEAM ACADEMY project proposes a complete, self-sustainable solution ranging from the use of robots and dedicated hardware platforms to the creation of a web-based platform that facilitates competitions and collaborations centered around learning communities. At the same time, teachers will benefit from training and open educational resources (OER) that will incorporate best practices in the field. Robo STEM academies will become centers of excellence, attracting

not only new schools, but also NGOs and informal groups interested in STEAM. In this way, the project will make a substantial contribution to the widespread dissemination of innovative teaching methods tailored to the needs of VET students and teachers.

Compared to the previously developed NITRO Clubs EU project, the new ROBO STEAM ACADEMY project initiative adds new classes of innovative STEAM technical concepts, methods and best practices, together with a software platform dedicated to international robotics competitions. The project thus cultivates in a structured way the STEAM skills and competences of VET students and teachers by creating new, innovative curricula for robo-STEM courses, using edutainment as a powerful innovative approach to learning and teaching. The results of this cross-sectoral project can be successfully used both in secondary schools, extra-curricular education centers or clubs, and in wider learning communities.

Through what it will achieve in terms of intellectual products and VET innovations, the ROBO STEAM ACADEMY project will encourage research in the field of educational innovations and support the integration of robots into the school and extra-curricular curriculum. VET students will be supported to develop their technical and creative skills through a mix of hands-on experiments and robotics competitions designed to stimulate their critical thinking and collaborative spirit.

A sustainable and replicable education model



The project proposes an integrated approach, emphasizing sustainability and rescalability. From the robotic hardware and co-creation software platforms, to the teacher training materials and open educational resources (OER), each component has been designed to facilitate replication and scaling of the model. In this way, tech high schools, NGOs and informal groups interested in STEAM and robotics

will have access to a well-defined framework and best practices in robotics and technology education as a whole.

New perspectives on VET education in Europe

By bridging the gap between traditional robotics and STEAM, the ROBO STEAM ACADEMY partners are opening up new opportunities for VET students and teachers, helping to develop their digital and technical skills, essential in tomorrow's job market. Moreover, by integrating a playful element into the learning process, the project aims to increase students' motivation and stimulate their interest in careers in technological fields.



The kick-off meeting focused on reviewing the project implementation plan, the main milestone deliverables, defining the methodological approach for achieving its objectives and discussing the key requirements for monitoring qualitative and quantitative indicators. ROBO STEAM ACADEMY consortium members also explored opportunities to ensure the long-term sustainability of the project. The transnational kick-off meeting was

coordinated by the National STEM Centre in Sofia, Bulgaria, with the participation of partners from the three countries involved, who contributed ideas and impactful presentations on the valuable expertise of their organizations in the technological preparation of VET students and teachers, as well as in the management of Erasmus+ projects.

The ROBO STEAM ACADEMY project is proof that innovation and technology can redefine education, preparing VET students to become leaders of change in a changing world. Robots are no longer just technological tools, but are now essential partners in training a new generation of STEAM professionals. With a vision focused on continuity and collaboration, the ROBO STEAM ACADEMY project opens new perspectives for VET students and teachers and thus contributes to the modernization of technical education in Europe.