



Promoting the use of recycled materials in robotics and electronics

Promising Practice

Implemented by:

Technical and General Education School Complex No. 3, named after Edward Abramowski in Katowice

Where:

Poland

Status:

Launched in April 2023

Summary:

The “Robot Wars in Katowice” initiative is a unique educational event that combines science, technology and ecology, encouraging youth to creatively and practically apply technical knowledge through the design and construction of robots using partially recycled materials.

Overview

Technical and General Education School Complex No. 3, named after Edward Abramowski in Katowice, Silesia Region, Poland, is a public school with a long tradition. The school provides training in electronics, photography and multimedia, and broadband electronic communication.

Description

The initiative was implemented in partnership with the Municipal Enterprise of Communal Economy (MPKG) in Katowice, which played a key role by providing participants with free access to recycled materials.

Student initiative

The 'Robot wars in Katowice' initiative originated from a group of four students, who presented it to their electronics teacher. Invitations and regulations were sent to secondary school students in Katowice with robotics-related programmes. The information spread further than expected, attracting teams from other Polish cities. A modest social media campaign was conducted, and the school gained publicity through local media, sponsors and city authorities.

Robotics competition

The idea quickly gained support and enthusiasm among teachers, the school's administration and the local community. It was recognized as a unique event where high school students independently designed and constructed robots. Around 30 students participated in the projects; six teams competed in the tournament, each with up to five participants. The winning project was called Niesporczakow.

Recycling

All robots designed by students were made of partially recycled materials.

Objectives

The initiative was mainly aimed at high school students and teachers and broadly at technology and ecology enthusiasts.

The "Robot wars in Katowice" initiative addressed the lack of engagement and practical application of technical and ecological sciences in youth education. In Poland, as in many other countries, there is a challenge to encourage young people to study technology, engineering and environmental issues. This project addressed this problem by engaging students in creating robots from partially recycled materials, developing their technical skills and raising ecological awareness.

Technology and ecology enthusiasts

The initiative focused on the practical application of technical knowledge in a real-life project, with an innovative approach to learning. The project promoted creativity and creative thinking and allowed students to apply theory to practice by engaging them in designing and building robots from partially recycled materials.

The innovative aspect of this initiative was also evident in its financing and promotional methods. Support from private companies, including those related to the project participants, and the dynamic online broadcast of the event were examples of modern methods of community engagement and promotion of technical education.

Outcomes and impact

Educational outcomes

The "Robot wars in Katowice" initiative significantly increased students' interest in technical sciences and ecological awareness. Due to the practical approach, students gained valuable skills in designing and constructing robots and understanding the value and significance of recycling.

Social and environmental outcomes

The initiative raised social awareness about the importance of sustainable resource use and recycling. The event built a strong community comprising students, teachers, technology enthusiasts and ecologists, facilitating the exchange of knowledge and experiences. The local community had the opportunity to see practical science applications in the real world, strengthening the message about the importance of technology and ecology in everyday life.

Media and promotional outcomes

The dynamic and professional live stream of the event, along with the presence of the local press and interviews with participants, contributed to the publicity and promotion of the event on a larger scale. This, in turn, positively impacted the promotion of technical and ecological education.

Challenges

Engagement of the school community and locality

A key success factor was the enthusiasm and support from students, teachers, the school administration and the local community. Thanks to the joint commitment and collaboration, an idea that started with a group of four students quickly became a full-fledged event.

Cooperation with local companies and institutions

The project gained solid financial and logistic foundations with support from MPKG Katowice and private companies related to teachers, parents of students and the students themselves. This multi-faceted support was crucial for achieving the ambitious goals of the event. Modern technologies and social media were used to promote and broadcast the event, increasing its reach and interest among a wider audience.

Innovation and creativity in education

Combining education with practical application and focusing on recycling materials demonstrated an innovative approach to education. Students could apply theory in practice, contributing to a better understanding of technical issues and raising awareness of the importance of recycling and sustainable development. A hands-on approach was also applied, engaging students in the practical designing and building of robots.

Insights

One critical insight is that involving students in practical projects increases their interest in technical and ecological sciences and develops skills essential for their future careers. Building partnerships with local businesses and institutions is necessary as it can provide both material support and practical knowledge. A creative approach to education and new technologies has been proven to increase engagement and teaching effectiveness significantly.

Next steps

There are plans to continue and develop the initiative, including organizing subsequent editions of the robot competition. The school intends to start collaborating with the Silesian University of Technology, particularly with the Faculty of Mechanical and Technological Engineering, and with more institutions to expand the project participants' educational and technical opportunities.

Learn more

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