



ERASMUS+ project

- Biotechnology in our life -

PROJECT GOALS

Why a project on biotechnology?

Biotechnological processes are defined as technical applications using living organisms (or parts thereof). These applications have a long tradition (production of beer, wine, cheese...), a high everyday relevance (wastewater treatment, production of medical products (e.g. antibiotics, insulin), production of new plant varieties, production of chemicals, production of detergents, medical diagnostics...) and a high potential for future challenges to our society (bioplastics, biofuels, biomedicine...). Some of the biotechnological applications are produced using organisms whose genetic information has been altered. The students lab *teutolab*-biotechnologie, which is affiliated to the University of Bielefeld, has found that (compared to the relevance of biotechnology) knowledge of the importance of biotechnology is low, both among high school students and in society.

Why an international project?

The topic gains international relevance because international cooperation is essential in research and development as well as in production. At the same time, various laws, e.g. the handling of genetically modified organisms (GMOs), are adopted at EU level. The acceptance of genetic engineering in biotechnology varies widely between EU countries. While in Germany the use of genetic engineering in the production of medicines is widely recognised, many German citizens oppose the use of genetic engineering in the production of food. For example, Germany is one of the few EU countries to make use of the special law in force since 2015 to ban the cultivation of genetically modified plants approved throughout the EU in its own country. Recording and discussing the nationality-dependent understanding of values for the use of genetic engineering in biotechnologists will be an important part of the project work.

What are the goals of the project?

The project is not only intended to provide participants with sound knowledge of biotechnology. At the same time, it is an important goal of this project to encourage students to think constructively, critically and scientifically and to present and represent their results in public. Ultimately, the aim of education is not only the accumulation of knowledge, but also the development of young people into mature personalities who are able to position themselves in society.

"Education means not only knowledge and qualification, but also orientation and judgement. Education helps to get to know the world and oneself in it. Only when knowledge and value awareness come together is a person capable of acting responsibly. And this is perhaps the greatest goal of education."

Berlin speech by former German President Horst Köhler at the Kepler Secondary School in Berlin-Neukölln, 21.09.2006

It is the declared aim of all project partners that the established cooperations (school-university, school-school, school-company, university-company, university-university) should also be maintained and expanded over the course of the project. In this way, the project contributes to the development of a European area of competences and qualifications.

It is also important to the teutolab-biotechnologie student laboratory that not only the participating students and teachers benefit from the project results, but also the general public. For this reason, each project year ends with an exhibition at which the pupils' findings are made accessible to the public in the form of student lectures and poster presentations. These events, which also include the discussion forum with representatives from business and politics, act as multipliers for colleagues, friends, relatives and interested citizens.

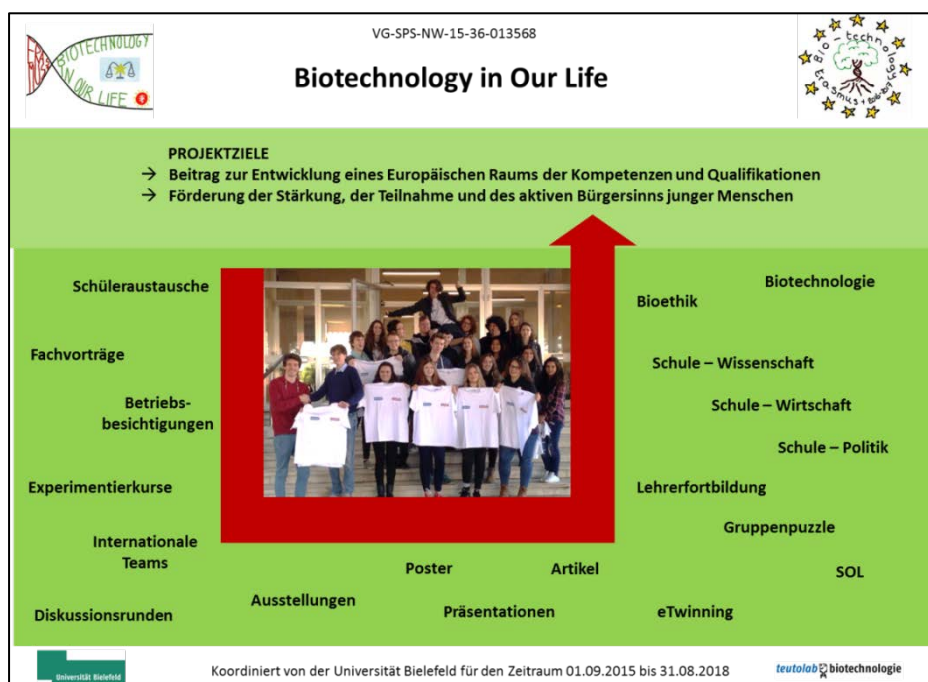


Figure 1: Overview of project content and project goals

What benefits does the project bring to the participants?

The participating students will...

... acquire profound knowledge in the multifaceted and interdisciplinary scientific field of biotechnology .

... get to know the daily and daily routine through expert lectures and the visit of biotechnological companies.

... become aware of the future significance of biotechnology.

... become familiar with the advantages but also with the risks of biotechnological processes as well as the legal requirements.

... open up to other values through transnational discussions (pupil-internal).

... form their own opinions and share them with representatives from science, politics and industry.

... independently carry out biotechnological experiments with relevance to everyday life in the laboratory.

... acquire language competence (English) as well as personality skills Personal competences (sensitivity in the dealing with other cultures, teamwork, responsibility, organization, openness ...) through intensive contact with the international students and through the implementation of trips abroad.

... gain competencies in the areas of didactics, creativity, language and presentation through the autonomous organization and realization of an exhibition with a presentation and discussion forum.

The participating teachers ...

... will acquire profound knowledge in the multifaceted and interdisciplinary scientific field of biotechnology.

... are shown possibilities to integrate modern biotechnology into their teaching.

... will establish contacts with regional biotechnological companies and universities, which they can continue to use even after the project has been completed.

... get to know school systems and teaching models of other countries.

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