

The future of scientific and technological professions and the conditions for an improved public understanding of science and technology

***Brief description:***

Three projects are currently funded by different foundations to analyse aspects of socialisation, intrinsic motivation and education in science and technology:

- [Improving young people's interest in natural sciences and technology \(MoMoTech\)](#)
- [Evaluation of a new initiative to run an engineering program in secondary schools \(School Project\)](#)
- [Empirical analysis for improving young professional's motivation in science and technology \(NaBaTech\)](#)

Qualitative and quantitative surveys will be conducted to investigate what young people associate with technology, science, engineering and associated professions and what influences their interest in science and technology. The research team will also analyse the impacts of public and private initiatives for improving public understanding of science and technology and provide normative advice of how to make these initiatives more productive and effective. Research partners are the RWTH Aachen, acatech (Council of Technical Sciences of the Union of German Academies of Sciences and Humanities) and the VDI (Federal Association of German Engineers).

In addition, an interdisciplinary working group of Berlin-Brandenburg Academy of Sciences is planned to start its work in January 2008. The main objective here is to review the European situation with respect to supply and demand of scientific and technological professions and to initiate European-wide initiatives to improve the present situation.

1 - Improving young people's interest in natural sciences and technology (MoMoTech)

***Brief description:***

The main objective of this study is to explore the interest of young people in science and technology, investigate their motivation to select their main subjects at school and later on the major discipline they would like to pursue during their tenure in college or university. Furthermore, the project team will identify the prominent examples for programs and initiatives to improve public understanding of science and technology, evaluate them by using empirical evaluation methods and construct a best practice databank. The results will be summarized in a meta-analysis. Based on this meta-analysis, the team will develop suggestions of how to raise interest of young people in science and technology and of how to strengthen the motivation to choose technology or the hard sciences as subjects for one's own profession.

The lack of qualified young professionals in science and technology is well recognized among policymakers in government and economy, but very little is known about which approaches and which methods are effective in the long term to remedy this situation. Many short term impact studies have been performed but a systematic evaluation is still missing in Germany. There is already a database available, including information about 900 pilot projects and model projects. It is an aim of MoMoTech to initiate a network of communication between the different actors involved in these projects and provide a platform for exchanging

experiences and sharing resources.

The project is funded by acatech and the company Georgsmarienhütte Holding GmbH. DIALOGIK is responsible for all empirical surveys, statistical analyses, and scientific reports.

**Duration:**

March 2007 – February 2010

**Project Management:**

acatech, Council of Technical Sciences of the Union of German Academies of Sciences and Humanities

**DIALOGIK's projects tasks are led by:**

Dr. Uwe Pfenning

**Supervision:**

Dr. Uwe Pfenning

Prof. Dr. Ortwin Renn

**Project Partner:**

Acatech, RTWH Aachen, FH Osnabrück, University of Stuttgart

2 – Evaluation of School-Engineer Academy (SIA)

***Brief description:***

The objective of this project is to evaluate one of the most important and impressive activities (SIA) in Germany for raising interest of young people in science and technology. The activity includes a special training program for students in the secondary school system to study engineering and technology. This is usually not done in the German secondary school system (either offering only sciences or combinations of science and technology). Several hundred students take part in this new technology oriented program. The research team will follow the career of these students through their time at school and later at college or university. This so-called “panel design” includes four different measurements of each participant in specific time intervals. SIA is founded by the association of regional companies in South Germany and the institution for education (BBQ Berufliche Bildung gGmbH). DIALOGIK is responsible for all empirical surveys, statistical analyses and scientific reports.

**Duration:**

September 2007 – October 2008

**Project Management:**

BBQ Berufliche Bildung gGmbH/ SÜDWESTMETALL – Verband der Metall- und Elektroindustrie Baden-Württemberg e.V.

**Supervision:**

Dr. Uwe Pfenning

Prof. Dr. Ortwin Renn

**Project Partner:**

acatech, BBQ, University of Stuttgart

**3 – Barometer for Improving the Interest of Young People in Science and Technology (NaBaTech)*****Brief description:***

NaBaTech offers a continuous monitoring exercise for estimating and forecasting the demand for and supply of young professionals in engineering and hard sciences. The acronym stands for professional barometer as an analogue to providing an objective yardstick for evaluating the present and future situation. Furthermore, the project will systematically survey students and young professionals about their perceptions of science and technology and, in particular, the perceived career opportunities and the subjective attractiveness of these subject areas. The surveys will include students of secondary schools, university students, teachers and professors, employed and unemployed engineers, and personal manager in companies. These broad investigations will allow the team to conduct sophisticated analytic comparisons of experiences and expectations, images and facts.

The imprinting by individual socialisation and the experiences of biographical careers will also be studied. The main objective of this project is to understand the intrinsic motivation of young people with respect to their choice of majors in college and university and to gain a better insight in their decision making when crucial choices about future careers are made. Finally, the project will suggest new approaches to improve counselling and advisories for assisting young people in making these choices. NaBaTech is founded by the Federal Ministry for Education and Science (BMBF).

**Duration:**

November 2007 – March 2009

**Project Management:**

Acatech (Coordination), Federal Association of Engineer in Germany (VDI)

**Supervision:**

Dr. Uwe Pfenning

Prof. Dr. Ortwin Renn

**Project Partner:**

Acatech, VDI, University of Stuttgart, BMBF