

Collaboration between schools and companies

Martin Lindner / Louise Bindel / Renate Dorn / Marie Fersterra Martin-Luther-University Halle, Germany

Abstract:

- recommendation of collaboration between schools and companies, as well as academic institutions
- everyday school situation does not make it easy to establish and keep up this collaboration and to make it fruitful for both sides.
- Research showed a single visit in a company or an academic institution is not satisfying the needs, neither of the students nor of the visited institution. Visits should be prepared and integrated into science classroom teaching.

The approaches of our examples of collaboration vary, but all are comparable in their intent to make science more relevant.

Finally, we will give tips and advice on what aspects will foster and what aspects hinder the establishment of new cooperations between schools and external partners. One example is a more playful attempt through a science competition like an egg race, including students, parents and companies

Expectations of a cooperation for

Schools

- Know-How
- Impulses for up-to-date lessons
- Financial support
- Sponsoring by lab materials
- Support in competitions
- Models for working in STEM careers
- Excursions to companies as part of STEM education

Companies

- Public image of the company
- Local popularity
- Meeting ethical statements
- Fostering STEM ideas
- Recruitment

Example 1

Päivölä School of Mathematics and Nokia Corporation's Toijala Center

Päivölä School of Mathematics:

- Corporation since 1997
- Päivölä School of Mathematics is a boarding school for mathematical talented students
- 20 students per year

Corporation – Learning by doing:

- Student work in small-scale Research & Development projects
- Work is curriculum integrated: 2 days a week with 6 hours
- Although the majority of the students work on software design, there are also projects related to, for example, graphical design, sound design, electronics, and new media.
- Some of the projects are done in collaboration with external partners, such as universities, NGO's or other companies.
- Example: development of backend of a web-based learning platform

Fruits of this activity:

- actual results in R&D projects
- scouting for talent
- Company gets a better understanding about the young generation, their needs and wishes as consumers as well as future employees
- Pupils get trainee's salary
- Authentic learning, contact to company



Babett, 14 years,
Winner of an arts contest:

How pretty the river is ...
my ideas swim along the waters, each time I am here, the clock does not count ...



Example 2

Sekundarschule Schkopau and Dow Chemical



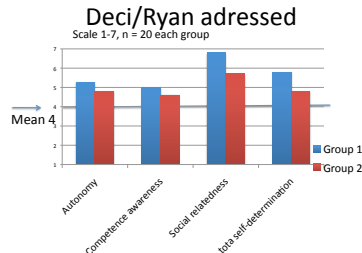
Water research project since 1999 including:

- Member of European networks
- Adoption of a creek („Bachpatenschaft“)
- Regular out-door-activetex collecting environmental data
- Membership in environmental networks
- Regular participation in regional science competition
- Winner of various competitions in environmental activities

Sponsoring:

- Financial grants
- Sponsoring of lab materials
- Mentoring of the lab

Basic needs according to Deci/Ryan addressed



Nokia: Collaboration with friends

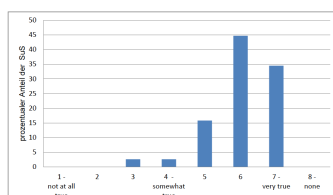


Abbildung 4: Prozentuale Verteilung der Bewertungen des Items 24 "I consider the people I work with to be my friends."

Recommendations

- Collaboration is based on personal relations
- Any collaboration needs reliability
- The duration of a partnership is crucial
- Principals should actively support STEM partnership
- Partnership is give and take
 - Consider the win-win-effets
 - Self esteem of students (and teachers)
- Cultures of schools and companies are different
 - Consider the differences
 - Consider dissatisfaction on both sides
- External support is helpful
 - (e.g. EU-programmes)