Educational Concept: Problem Based Learning

- Student centered
- Small groups
- Working with each other on concrete problems
- Under guidance of a tutor
- Supported by self-study

Key features of Research Based Learning

- Undergraduate research in small groups
- Embedded in the undergraduate curriculum
- Three pillars in each project: Research, Societal partners, Interdisciplinary or interfacultary

Seven-jump

1. Solve difficult terms
2. Define the problem
3. Brainstorm
4. Analyze and criticize
5. Learning objectives
6. Study innovation/self-study
7. Report and synthesize the newly acquired information

Research on PBL: effectiveness

PBL students are
- more highly motivated
- better at problem-solving and self-directed learning
- better able to integrate basic science into the solutions of professional problems
- better at collaboration
- are highly satisfied, feel not confident

Lessons learned

- Take care of early communication
- Take sufficient time for the practical aspects (e.g., Examination Regulations, Scheduling and Planning of the Interactive sessions)
- Start the cooperation with societal partners at an early stage

Some numbers

2009: 64 students, 10 different projects
2010: 151 students, 22 different projects (including 'psychology custom made' where each student conducts his own research)

All students who wanted to start a research master, are automatically admitted at the research masters at the UM

In 2009 RBL-students had an average of 8.26 for the project
In 2009 RBL-students had an average of 8.13 for their thesis, as where regular students had an average of 7.4 (GPA)

Some practical obstacles

- Lots of options for students in their curriculum (RBL is just one of these options)
- Civil effects and/or demands for accreditation limit possibilities for implementation of new educational concepts such as RBL
- Facility maintains mandatory requirements in their curriculum, therefore limiting the possibility for the implementation of new educational concepts such as RBL

First results of RBL at UM

- There is unity among students who participate in RBL projects, although few practical activities are planned
- The RBL project is for both tutors and students viewed as a search for new knowledge
- There is more academic interaction between academic staff and students in a small setting

Plan for 2011

- Develop a plan for each faculty to increase the number of students participating and the number of tutors for supervising and coaching students
- Optimizing interfacultary projects
- Linking for more cooperation in projects with social partners
- Embedding RBL in academic structure (Examination Regulations, planning a fixed spot at each faculty)
- Facilitating the creation of a community on RBL

Almost 2 years of experience

- Extra challenge within the curriculum
- Experience in carrying out research
- Experience with interdisciplinary collaborations
- Possibility to get to know the scientific world better as well as the business world and one’s own ambitions and talents in order to develop them further

Added value for students

- For Faculties
  - Projects enrich the shaping of both research and education
  - Stimulates multidisciplinary and interfacultary cooperation within the realms of education and research
- For Academic Staff
  - Programme offers involved academic staff a context in which they can enrich their own practice
  - Further generic professionalisation in the area of education

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First impressions and results

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- Large for recognisable innovations in education
- Offers challenges for staff and excellent and/or highly motivated students
- Stimulation of interdisciplinary and transfacultary climate in both research and education

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