

New Challenges for German Universities of Applied Sciences (Fachhochschulen) in the Bologna process



Guenter H. Schulz

- The enormous change of German higher education system by the Bologna process
- The specific challenges from Bologna process for the UAS (Fachhochschulen)
- How to compete with the new situation in Germany



German higher education system before Bologna

Academic Education

■ University

- **5 years; Diplom, Magister**
- basics-related teaching and research
- 8 hours obligatory teaching
- educate young scientists
- third cycle (PhD)
- Research, higher management and higher level civil servants

■ Fachhochschulen (UAS)

- **4 years, Diplom (FH)**
- **practice-related teaching and research**
- 16-18 hours obligatory teaching
- **qualifying to enter a profession
(external practical semester, external
diploma thesis)**
- only first cycle, never third cycle
- managing engineer, sales manager,
higher intermediate level civil servants

German Higher Education System before Bologna

Professional Training

Dual training in different combinations of on-the-job training and lessons in professional schools

- To become a skilled worker, e.g. baker, electrician, plumber etc.: 2-3 years (Apprentice with a special contract of an employer)
- Berufsakademie: new form of higher education with professional orientation and on-the-job training: 3 years (50/50) (students employed by a company, public authority or counsel).

German Higher Education System after Bologna

UNIVERSITIES

All disciplines

3 years; B.Sc.; B.A.; B.Eng.
(qualifying to enter a profession?)

2 years; M.Sc.; M.A.

FACHHOCHSCHULEN (UAS)

limited number of disciplines

3-3,5 years; B.Sc.; B.A.; B.Eng.
(qualifying to enter a profession)

1,5-2 years; M.Eng.; M.A.; M.Sc.
practice-related or research-related

*all grades don't have supplementary declaration in brackets
both master grades allow to enter higher level civil servants
both master grades allow to enter third cycle*

Aim: young scientists

Third cycle (PhD)

Basic and applied research

In the case of research-related Master
young scientists, too
(Third Cycle , PhD?)

applied research

Different study courses

Bachelor study courses (6-8 semester)

Dual bachelor study courses (6-8 semester)

1st variant: professional training 2 semester + 4 semester study
(e.g. Physiotherapy)

2nd variant: election of students by a company+ scholarship
normal BA programme + training in the
company
(e.g. Industrial engineering with
Vattenfall EUROPE Mining AG)

Konsekutive Master study courses (1,5 – 2 semester)

Postgradual Master study courses (4-5 semester)

Distance Master study courses (4-5 semesters)

New obstacles for UAS (FH's)

- **the UAS are allowed to offer master programmes but without changes in:**
 - number of obligatory teaching hours per week (16-18)
 - no non-professional teaching staff (0,3 per Professor)
 - financial support, especially for research
- **The aim of Bachelor study courses to qualify for profession is not in any case fulfilled (lost practical semester, ext. Thesis)**
- **Loss of mobility and internationality by condensed and intensified curricula (reduction of non lecture period)**

BA/MA study course Biotechnology

- **Qualifying to enter a profession:**
 - 7-semester BA programme
 - external practical semester (5th),
 - Thesis in combination with a research project (5 month)
- **Mobility**
 - outgoing:
 - practical semester and/or BA´ Thesis, Master´Thesis **worldwide**
 - in coming:
 - 6th semester with elective courses **in English**
 - Master programme completely **in English**
- **Soft skills**
 - self-organizing external periods, presentation and publication, tutorialum
- **Flexibility and academic standards:**
 - profession and research career
 - national and international reputation by students and graduates

Conclusions

- The Bologna process will to some degree adapt the different types of institutions of German Higher Education and at the same time diversify with respect to research in:
 - research universities and research UAS
 - teaching universities and traditional UAS
- For all science and technology based study courses, especially in master programmes research is a prerequisite for qualified higher education
- Because financial and human resources for research at UAS are limited in Germany institutional cooperation/fusion between UAS and between UAS and universities have a high degree of probability