Gender and Diversity as Structural Components of Quality in New (Engineering) Study Programs
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1. Relevant Questions

- In February 2006 the German Accreditation Council decided to review gender-mainstreaming concepts of HEI (higher education institutions)
  - The existence of Gender Mainstreaming has an impact on study programs
  - Effects have to be evaluated in accreditation procedures
- HEI have to decide themselves about appropriate ways to integrate gender mainstreaimg into their new study programs
- Both, HEIs and accreditation agencies need criteria and procedures for observing the effects of gender mainstreaming concepts in higher education
Some Definitions

- Gender Mainstreaming: “(...) to incorporate the different living situations and interests of men and women within all societal projects a priori and regularly, because there is no such thing as a gender neutral reality.“ (BMFSFJ 2006)

- Diversity: umbrella term describing individual varieties (e.g. gender, age, culture, sexual orientation, religion, handicaps)

- Quality: stakeholders (professors, students, administration, future employers) in the process of university education define the requirements making quality for each single study program
  - within a specific environment
  - with specific political, juridical and economic constraints
  - they define their interests
  - they bring in believes and convictions
2. Gender aspects in Excellence and Quality Assurance

The number of articles

The work / research

Quality of an individual

Integration into the scientific community

Criteria:
- Reliability
- Validity

Visibility and recognition:
- Publications
- Social Networks
- Citations

Procedures
- Gatekeepers
- Transparency

Assessment of the work

Measured excellence

Citation circles

Based on Margo Brouns (2006)
3. Gender Criteria in Quality Assurance in Engineering Education

- Lack of Personnel (18,000 missing engineers / year)

- Demographic Change

- Changes in Industry:
  - Diversity as a management concept and
  - Diversity in products and services because of customizing
  - Leads to specific qualifications of job entrants

- Impulses in Engineering Education:
  - Take care for the further education of senior engineers
  - Take care for more continuous careers of female engineers (Re-entry)
  - Take care for strategical integrating of young people with a migration background
  - Integration of customizing into technical development
4. The Gender concept at TUM

**Executive board of TUM**
- Fundraising to support women
- Inclusion of women's and equality representatives into the University executive board
- Equality Act (since 1995)
- University development plan includes voluntary commitment to Gender Mainstreaming

Agreements on:
- “Fair Play” at the workplace
- Prevention of sexual harassment at the workplace

**Studying at TUM:**
- Gender competence in subjects
- Agency for girls in science and technology
- Career Center for women
  - mentor\(\text{ING}\)
  - vacation academy and further education

**People at TUM:**
- Alumni / networks
- Public relations
- Outstanding people in the history of TUM
- 100 years of women studying at TUM

**Management:**
- Recruiting of personnel
  - Projects for schools and female pupils
  - Scientists and researchers
  - Procedures of appointment
- Human resources development
  - Support of female scientists
  - Further education
- Quality management
  - Gender Mainstreaming
- Controlling / Evaluation / Peer Reviews
  - Diversified statistics

**Research at TUM:**
- Department
- Consultancy in Research
- Research Projects

**Campus:**
- Childcare opportunities
A view to the Excellence Initiative

- Munich Dual Career Center
- Gender Issue Incentive Fund
- Work life balance
  - child-care facilities
  - new workplaces at home
  - part-time studies / re-entry studies
  - re-integration on return from parental leave
  - Family Care Structural Fund
- Gender consulting
- Professionalizing gender mainstreaming
  - Target agreements on Gender orientation
  - Gender sensitive personnel recruitment and development
  - quality management and controlling to gender issues
5. Gender and Diversity in New Engineering Study Programs

Integration of Diversity and Gender Mainstreaming

Engineering Culture

Engineering curriculum:
- overall organizational goals
- educational goals (learning outcomes)

Hidden curriculum
Access to Culture
(Setting, Orientations, Procedures)

Habit

Return of Quality

Internal Quality Assurance

External Accreditation

Outcome

Income
6. Gender and Diversity in the Management of HEI

- Business level:
  - open, constructive and scientific climate of motivated colleagues including different target groups / stakeholders

- Economic level:
  - through demographic change and too small student numbers in engineering, the need for technical professionals raises and can become negatively influential on the economic cycle

- Technical level:
  - due to technical developments new markets for new products arise; based on the awareness for a broader customer's diversification, new technologies can define diversity benchmarks and specifications early in the development process
Interdisciplinary arrangements in engineering education regarding new target groups

Introduction of gender criteria in university can help implementing the growing diversity of societies, companies and educational institutions to meet future needs of the markets

Changes in the profession of engineers anticipate the steps HEI have to go to be successful in engineering education