Competences and Careers

– Outcomes of Study Programmes in Wood Science and Technology

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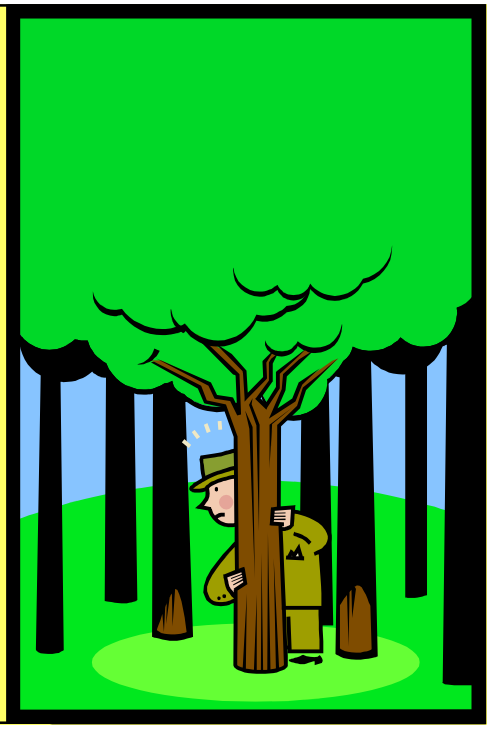

Idea of this key note

- based on personal experience
  - including educational networks
    - relating observations which apply to higher education in wood science & t.
      - stimulate discussion on careers and competences

Education in IUFRO

NEW: EFS – IUFRO Task Force on Education in Forest Sciences

IUFRO group S 5.14.00
Forest Products Education

IUFRO group S 6.06-04
Education in silviculture

IUFRO Education Group S 6.09-00
Improving education and further education in forestry

IUFRO group S 6.08-02
Education, gender and forestry

http://www.tf-efs.proste.pl/en/home/contact.htm

www.tf-efs.proste.pl

Register Login

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Forstliche Arbeitswissenschaft

Future events

- III Taller sobre Educación Forestal en América Latina

Universitat de Lleida

iberus

http://www.udl.cat/

www.silva-network.eu

Silva NETWORK

Annual conference

November 22th till November 25th 2012

Do our students learn what they will need later?

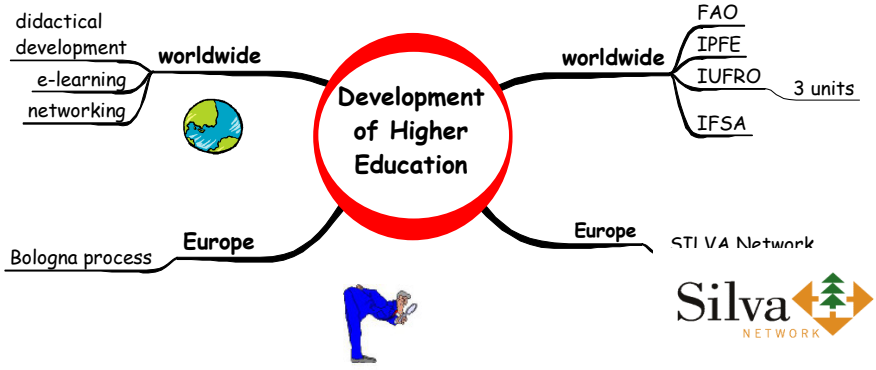
About expected learning outcomes
and competences of graduates

First announcement

On behalf of the SILVA Network the Higher School of Agricultural Engineering of the University of Lleida will host a conference on Forestry education.

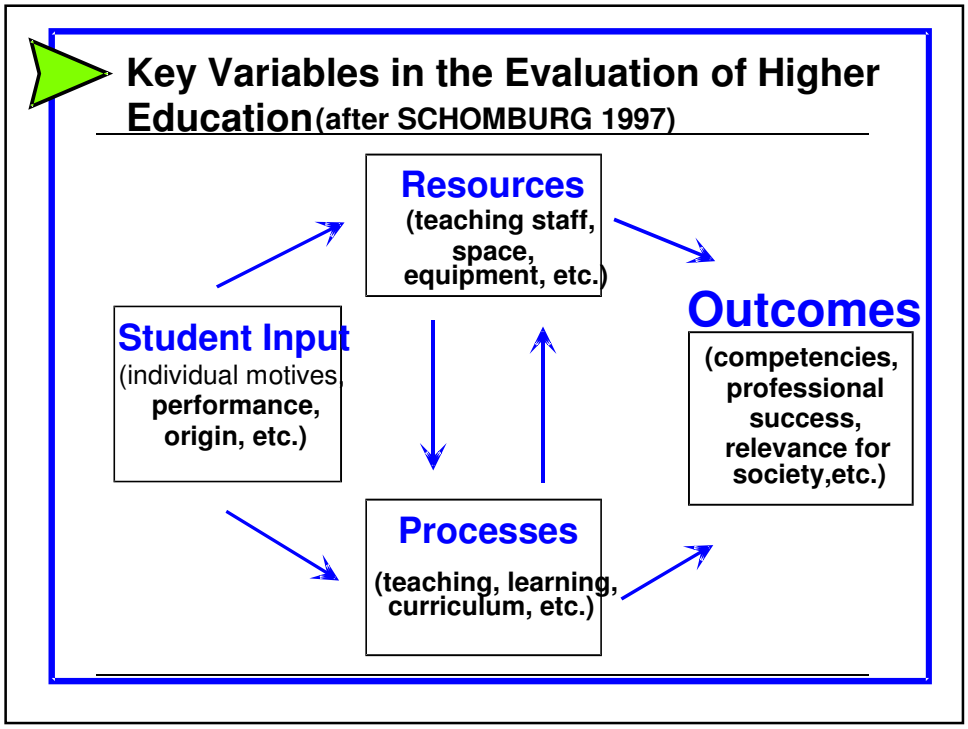
general

foresty & related sciences

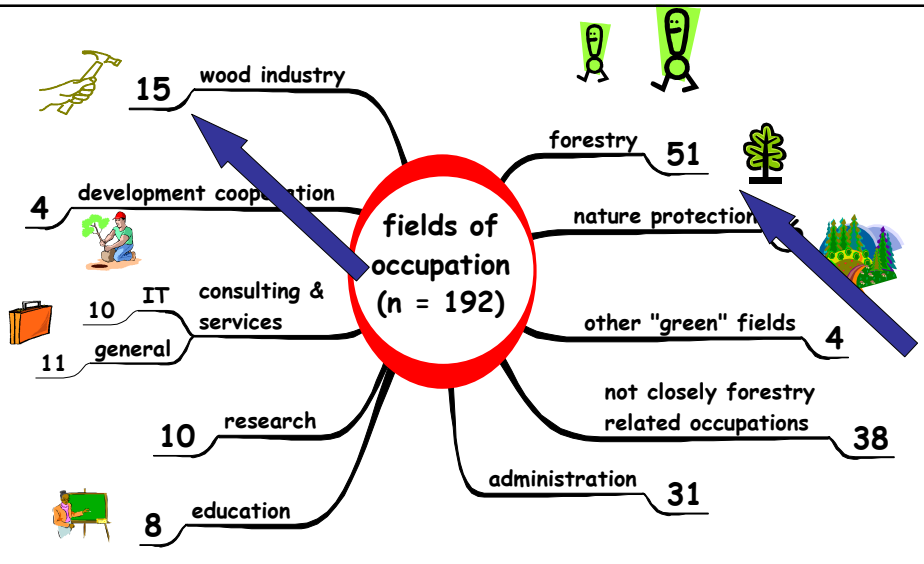


Silva NETWORK


Centro de Estudios y Ambientales de Postgrado
Opción: Tecnología de Productos Forestales
1ER WORKSHOP
"PERSPECTIVA DE LOS ESTUDIOS DE POSTGRADO DE TECNOLOGÍA DE PRODUCTOS FORESTALES"
2011
LUGAR: Salón de Conferencias del Centro de Estudios Forestales y Ambientales de Postgrado
Segundo Piso, Edificio Central de la Facultad de Ciencias Forestales y Ambientales
Conjunto Forestal, vía Chorros de Milla, Mérida Estado Mérida, Venezuela.
Teléfonos de Información: 2401920 - 2401517 - 2401599.
CIENCIAS FORESTALES Y AMBIENTALES
UNIVERSIDAD DE LOS ANDES
MÉRIDA VENEZUELA

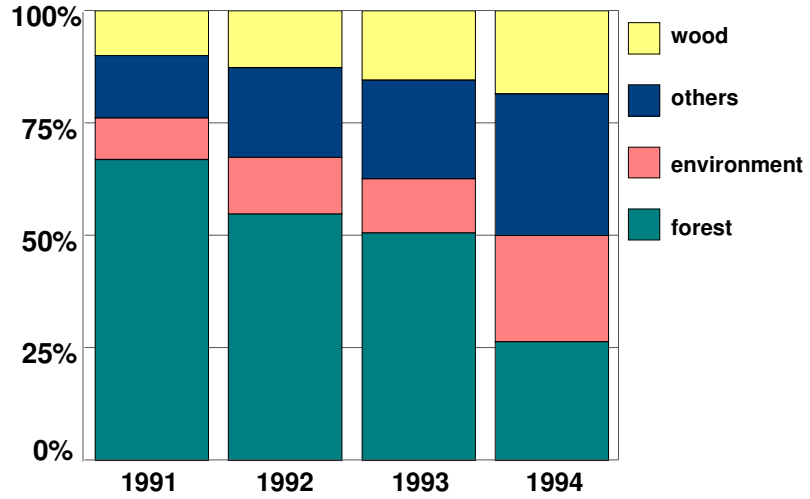

Key Variables in the Evaluation of Higher Education (after SCHOMBURG 1997)
Resources
(teaching staff, space, equipment, etc.)
Student Input
(individual motives, performance, origin, etc.)
Outcomes
(competencies, professional success, relevance for society,etc.)
Processes
(teaching, learning, curriculum, etc.)

By a first semester student in Freiburg



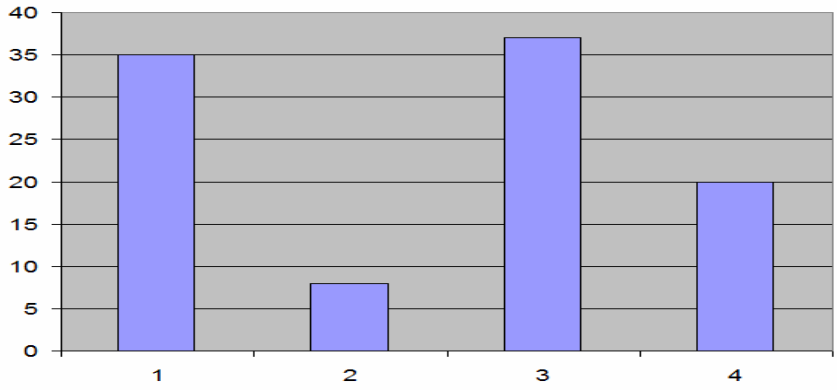
Present occupations of foresty graduates of the University of Freiburg in 2006 (after Lewark et al 2006)

Fields of work (employees) (n=354 answers)



(after Gerecke & Ihwe 1997)

Graduates in *Wood Science & Technology* from Hamburg University, summarized, %



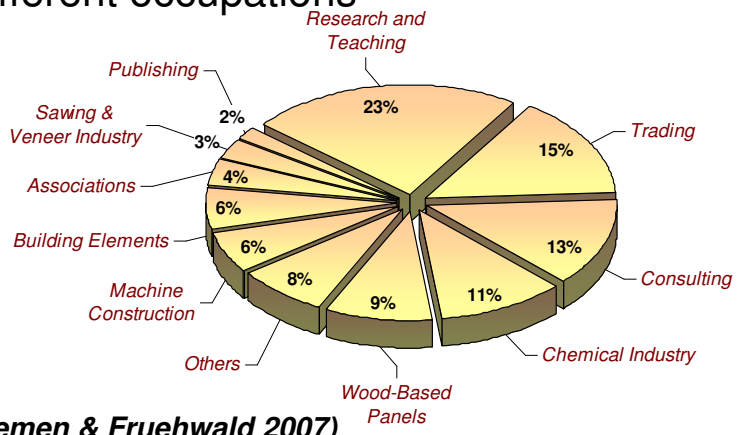
wood science & wood industry — other fields

narrow sense — wide sense — partly

Source: Bund Deutscher Holzwirte 2012

Example: Graduates in *Wood Science and Technology* from Hamburg University

- Challenge: Programs have to suit a variety of different occupations

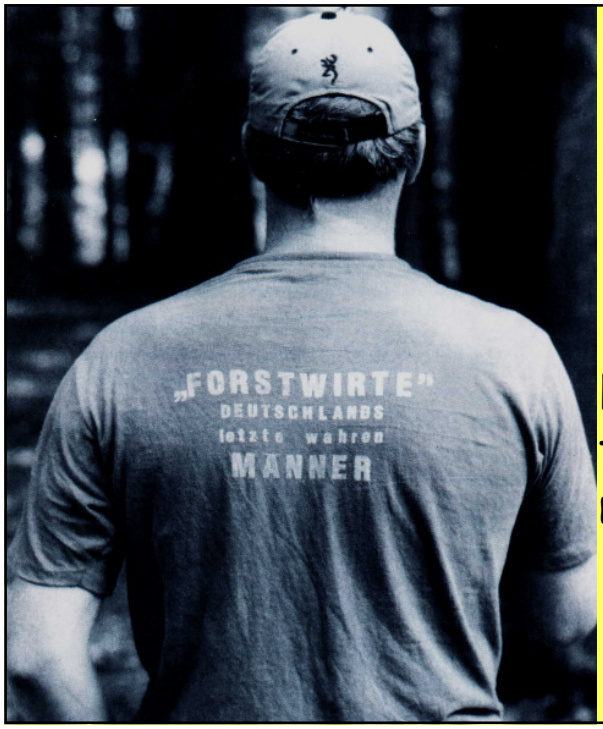


(after Thoemen & Fruehwald 2007)

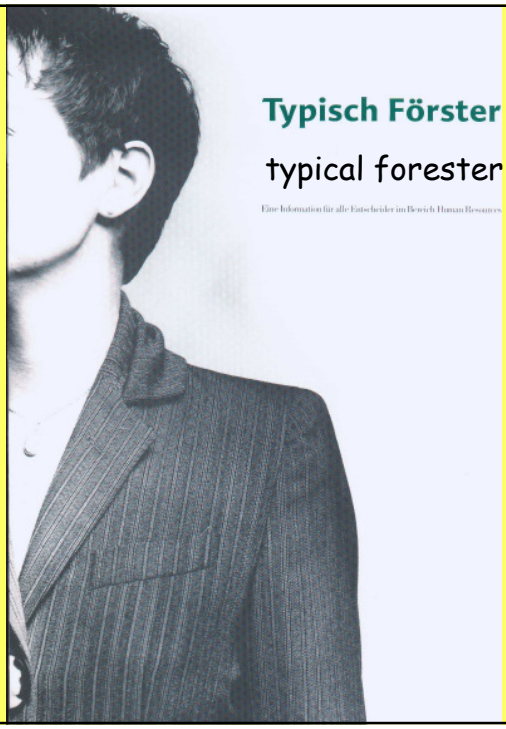
Source: Bund Deutscher Holzwirte

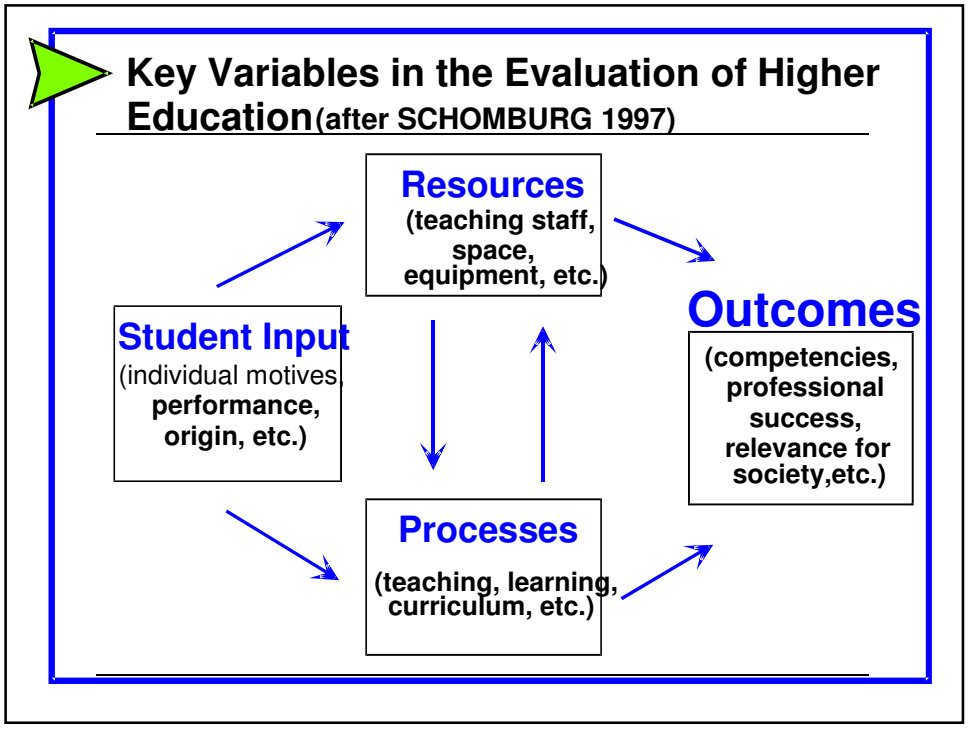
Observations: forestry vs. wood science & technology study programmes: careers

- graduates from forest sciences working in wood industry
  - graduates from wood science and technology not working in forestry i.n.s.
    - more recent graduate analyses for forestry programmes
      - overlap of contents of study programmes



Forest workers - the last real men in Germany





Competences

Competences are clusters of related knowledge and skills and attitude, which determine if a student/future professional is able to perform (occupational) tasks.

Competences determine content, educational approach and organisation of the curriculum.

(after van Rooijen 2005)

Why focusing on competences?

- further transparency of professional profiles in study programmes and emphasis on learning outcomes
- shift to a more learner oriented approach of education
- need for higher levels of employability and citizenship
- growing demand for life long learning in society which requires more flexibility

(after van Rooijen 2005)

Educational approach

- student oriented approach
  - students play an active role
  - teachers are steering the learning process
- practical oriented
  - doing instead of thinking
- labour market oriented
  - labour market plays an active role

(after van Rooijen 2005)

How to make course objectives and assessment to fit together **in practice**?

Formulate intended learning outcomes!

Expected learning outcomes - what students will know and be able to do as a result of engaging in the learning process during the course.

They represent statements of achievement expressed from the learners' perspective..

at the end of the course learners will know … and be able to do….

From: Norbert Weber 2008

Table 16. Q2 respondents' ranking of importance of **generic competences** in future forestry education programs on the BSc and MSc level, respectively (scale of importance: 1 - none, 2 - weak, 3 - considerable, or 4 - strong).

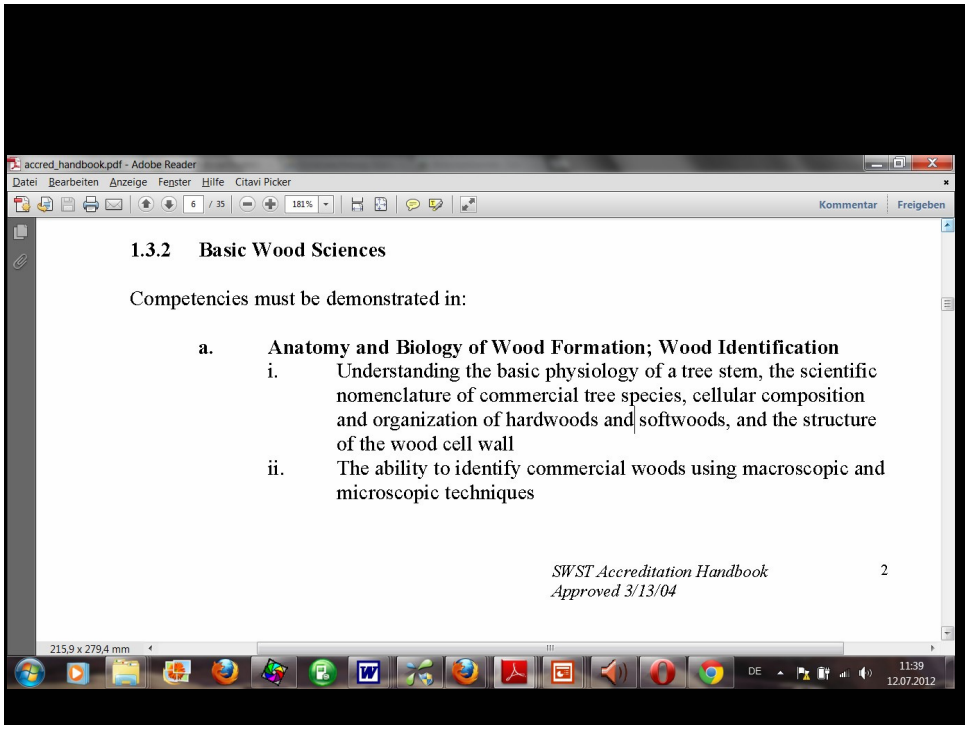
(from PhD dissertation (Joensuu, Finland) by Schuck 2008)

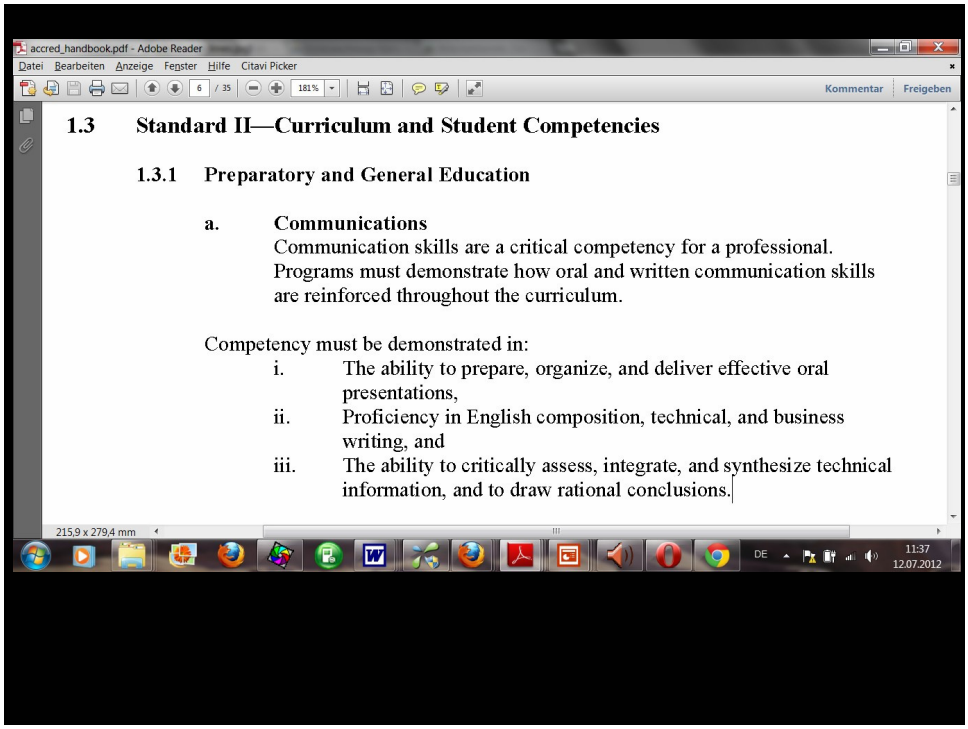
Ranking				
BSc	MSc	Importance of competence in…	BSc mean	MSc mean
1	5	basic general knowledge in field of study	3,7	3,6
2	22	capacity for applying knowledge in practice	3,6	3,4
3	17	teamwork	3,5	3,5
4	6	capacity to learn	3,5	3,6
5	12	interpersonal competences	3,4	3,6
6	16	initiative & entrepreneurial spirit	3,4	3,5
7	18	elementary computing competences	3,4	3,5
8	7	capacity to adapt to new situations	3,4	3,6
9	**2**	information management skills	3,3	3,8

Table 18. Q2 respondents' ranking of importance of **subject-specific competences** of future forestry university graduates for BSc and MSc level, respectively (scale of importance: 1 - none, 2 - weak, 3 - considerable, or 4 - strong)

(from PhD dissertation (Joensuu, Finland) by Schuck 2008)

Ranking			Mean	
BSc	MSc	Importance of…	BSc	MSc
1	7	Silviculture	3,5	3,3
2	15	Forest management planning	3,3	3,2
3	10	Logging operations & technology	3,3	3,2
4	3	Information systems	3,2	3,4
5	8	Biodiversity	3,2	3,3
6	9	Fuel and energy	3,2	3,3
7	5	Forest ecology	3,2	3,3
8	20	Mensuration & inventories	3,1	3,0
9	4	Forest industry	3,1	3,3
10	1	Forest economics	3,1	3,6

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Kommentar Freigeben
1.3 Standard II—Curriculum and Student Competencies
1.3.1 Preparatory and General Education
a. Communications
Communication skills are a critical competency for a professional. Programs must demonstrate how oral and written communication skills are reinforced throughout the curriculum.
Competency must be demonstrated in:
i. The ability to prepare, organize, and deliver effective oral presentations,
ii. Proficiency in English composition, technical, and business writing, and
iii. The ability to critically assess, integrate, and synthesize technical information, and to draw rational conclusions.
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Additional aspects, just mentioned

- practice of exams, assessment of learning success
- potential of e-learning
- internationalisation
- universities vs. UAS (universities of applied sciences)
- continued education, workplace learning

"… the Internet may be the means of realizing a forestry lecturer's dream.

Imagine being able to discuss, for example, different timber harvesting systems used internationally with a group of motivated students from different regions of the globe in one virtual classroom."

(Längin, Ackerman & Lewark, 2004)

How to go for e-learning ?

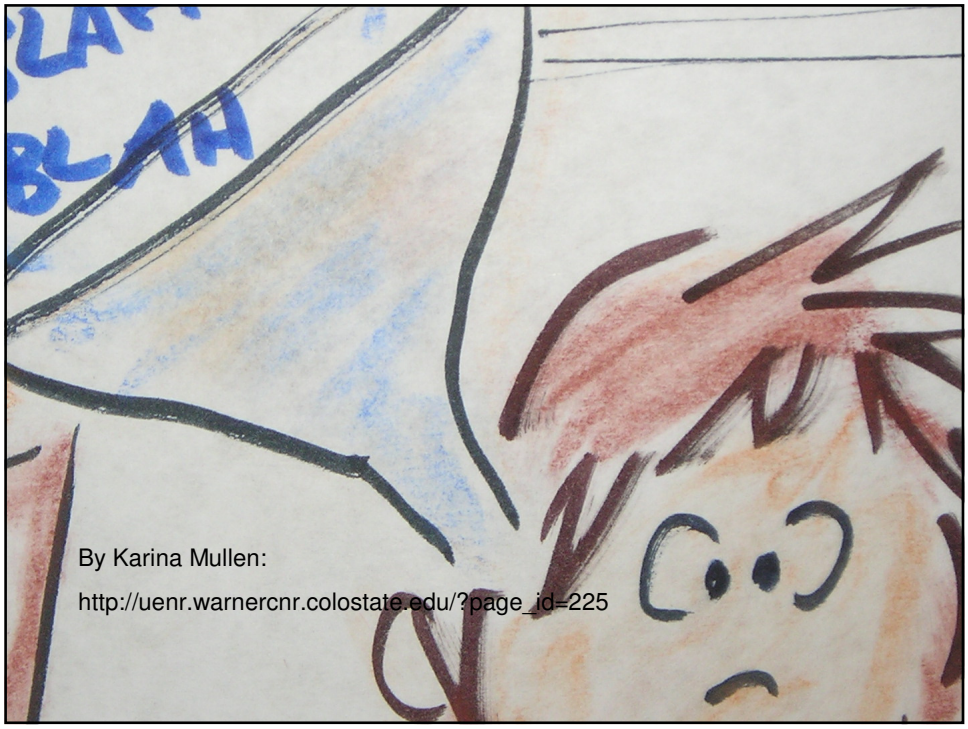
- teacher can do it easily, little input
- learner oriented
- open resource learning platform
- use the freedom you have

In addition to Universities: Universities of Applied Sciences

- syn.: Fachhochschule, Polytechnic
- 5 more in Germany
  - Rottenburg
  - Freising
  - Eberswalde
  - Göttingen
  - Schwarzburg

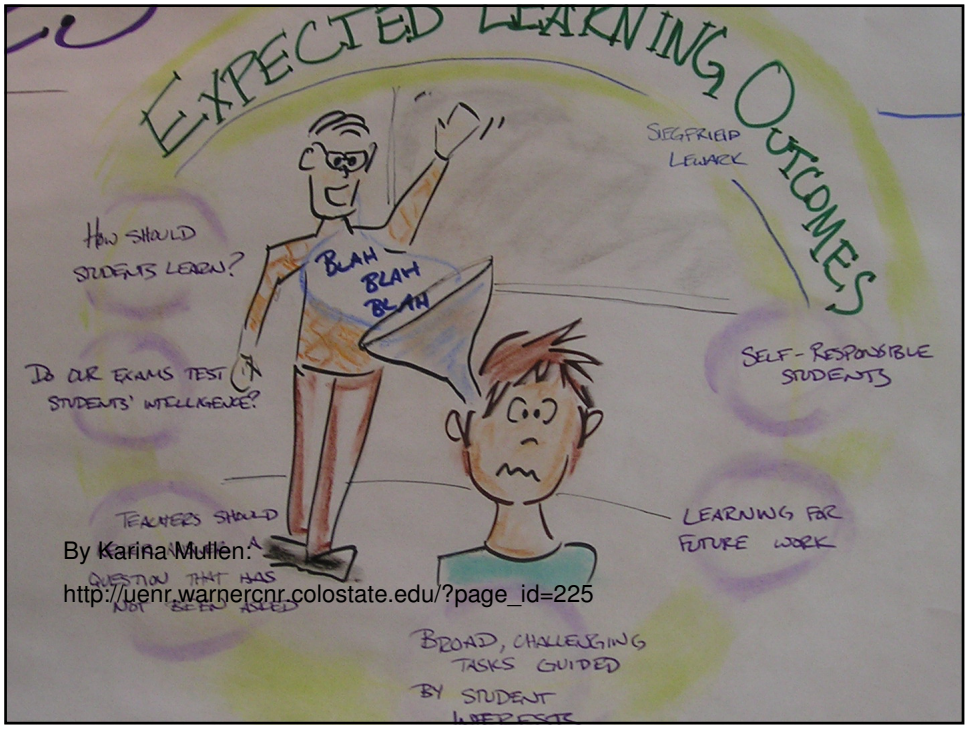
Observations: forestry vs. wood science & techn. study programmes: comptences

- outcome orientation implies competence orientation
  - generic competences at least as important as subject specific competences
    - competences by active learners
      - activation depending on methods
        - **from teaching to learning !**



By Karina Mullen:

http://uenr.warnercnr.colostate.edu/?page_id=225



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