BFW FOREST TRAINING CENTRE Ossiach

We bring knowledge into the forest

E-learning in forestry – pros and cons

Professional training in sustainable forest management in Austria, Slovenia and Croatia: Experiences, lessons learnt and looking ahead

Johann Zöscher
Forestry Training Centre Ossiach of BFW
Head

EBQ ERWACHSENENBILDUNG MIT QUALITÄTSGARANTIE

ÖCERT

SAAR CERT TÜV ISO 9001:2008

Zagreb

June, 2018

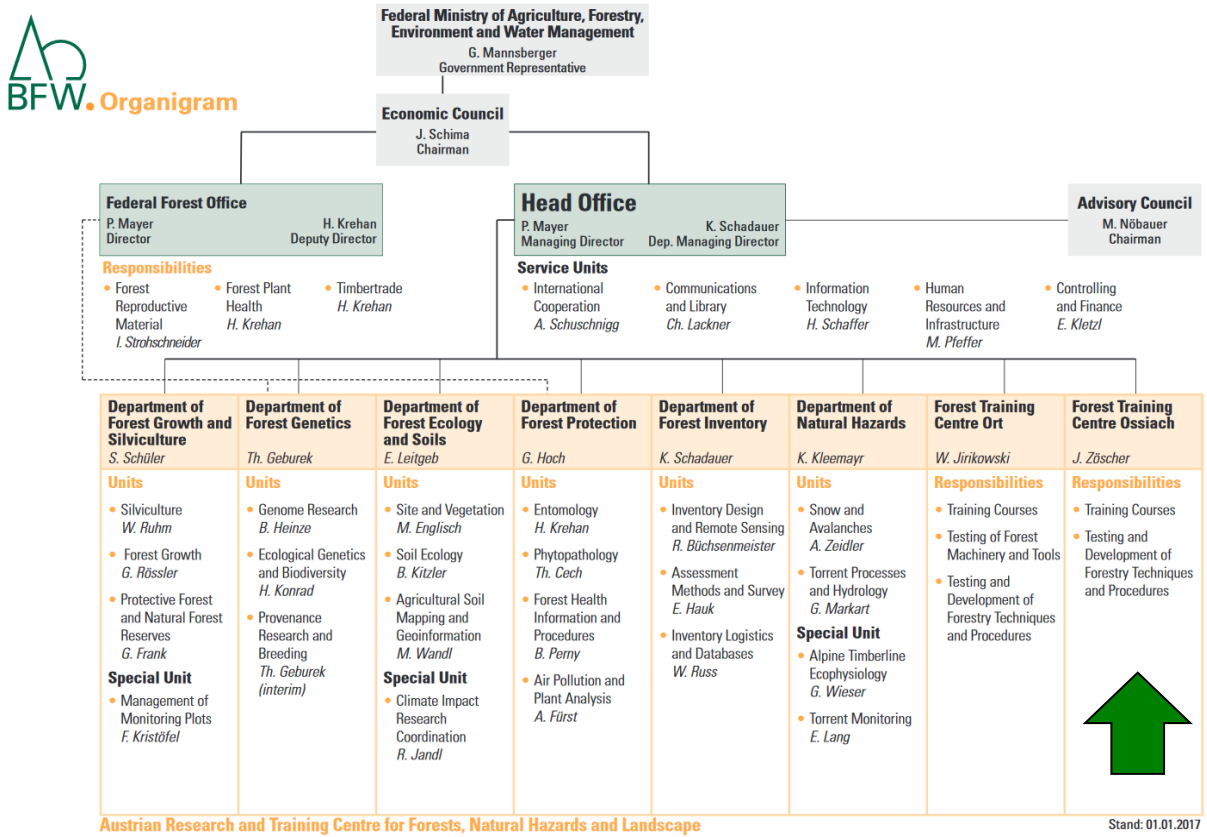
Forestry Training Centre Ossiach of BFW

BFW. FORSTLICHE AUSBILDUNGSSTÄTTE Ossiach

BFW. Bundesforschungszentrum für Wald

BFW. FORSTLICHE AUSBILDUNGSSTÄTTE Ossiach

Organisation of BFW…



BFW. FORSTLICHE AUSBILDUNGSSTÄTTE Ossiach

Forstliche Ausbildungsstätte Ossiach des BFW
Tätigkeit und Bildungsangebot

Forstfacharbeiterkurs
Dauer: 5 Wochen
Voraussetzung:
lt. Ausbildungsverordnung

Forstschutzorgan und Forstwirtschaftsmeisterkurs
Dauer: 13 Wochen
Voraussetzung: lt. Ausbildungsverordnung bzw. Forstgesetz 1975 idgF.

Motorsägenkurse
Dauer: 1 bzw. 2 Wochen
Zertifizierter Motorsägenkurs

Seilbringungskurse
Dauer: 1 bzw. 2 Wochen
Zertifizierter Forstmaschinenführerkurs

BFW. FORSTLICHE AUSBILDUNGSSTÄTTE Ossiach

Forstschlepperkurse
Dauer:1 bzw. 2 Wochen
Zertifizierter Schlepperkurs

Forsttechnikkurse
für Forststudenten, Forstwarte, Försterschüler, Schüler landwirtschaftlicher Fachschulen

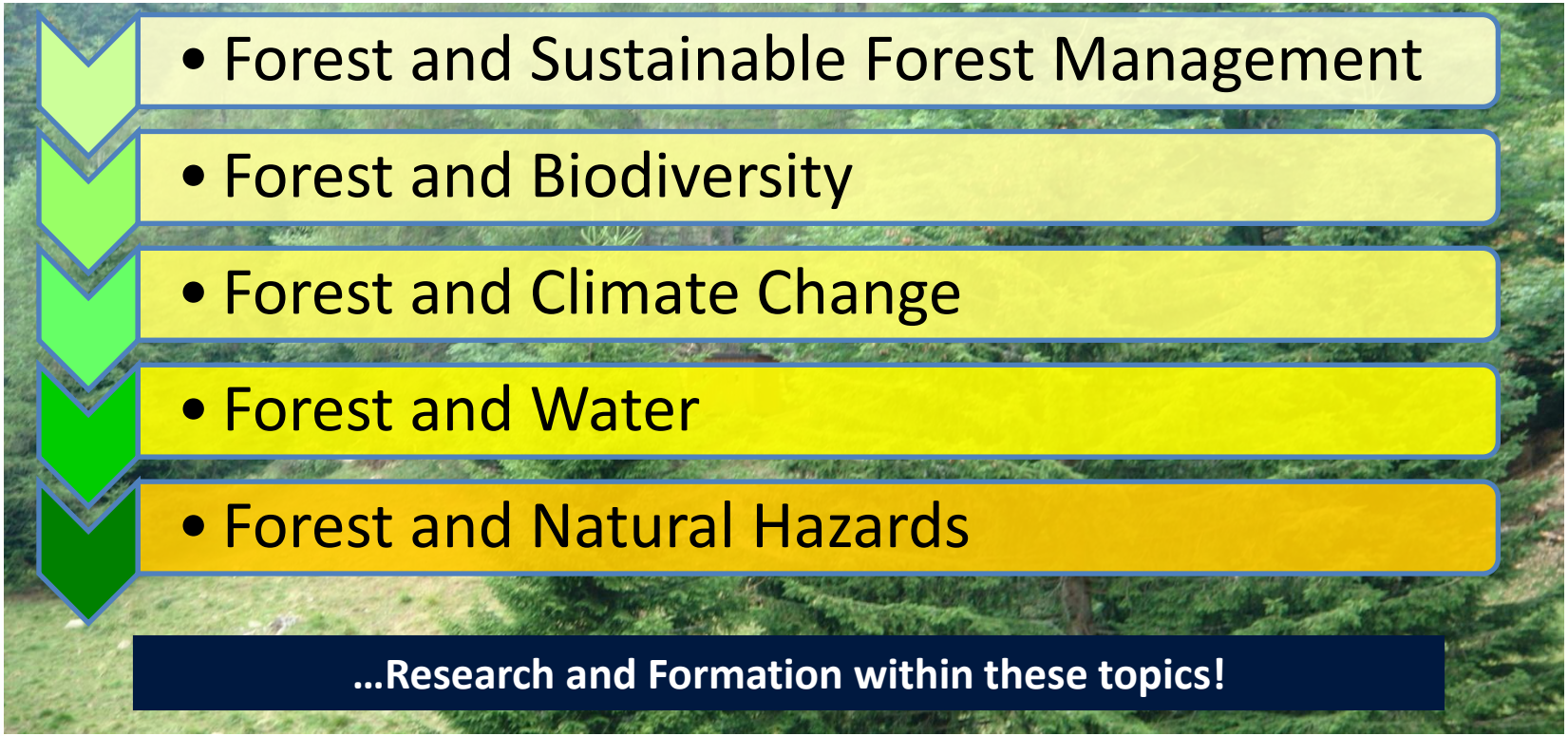
Spezialseminare
für Jäger, Waldpädagogen und zu aktuellen Themen

Kurse auf Kundenwunsch
z.B. Trainingskurse für Forstunternehmer oder Forstbetriebe, Einschulungen auf Forstlichen Seilanlagen, Feuerwehr, Wildbach- und Lawinenverbauung

Holzmesskurse
Dauer: 1 bzw. 2 Wochen
Zertifizierter Holzmesskurs

BFW. FORSTLICHE AUSBILDUNGSSTÄTTE Ossiach

Today‘s strategy of BFW…

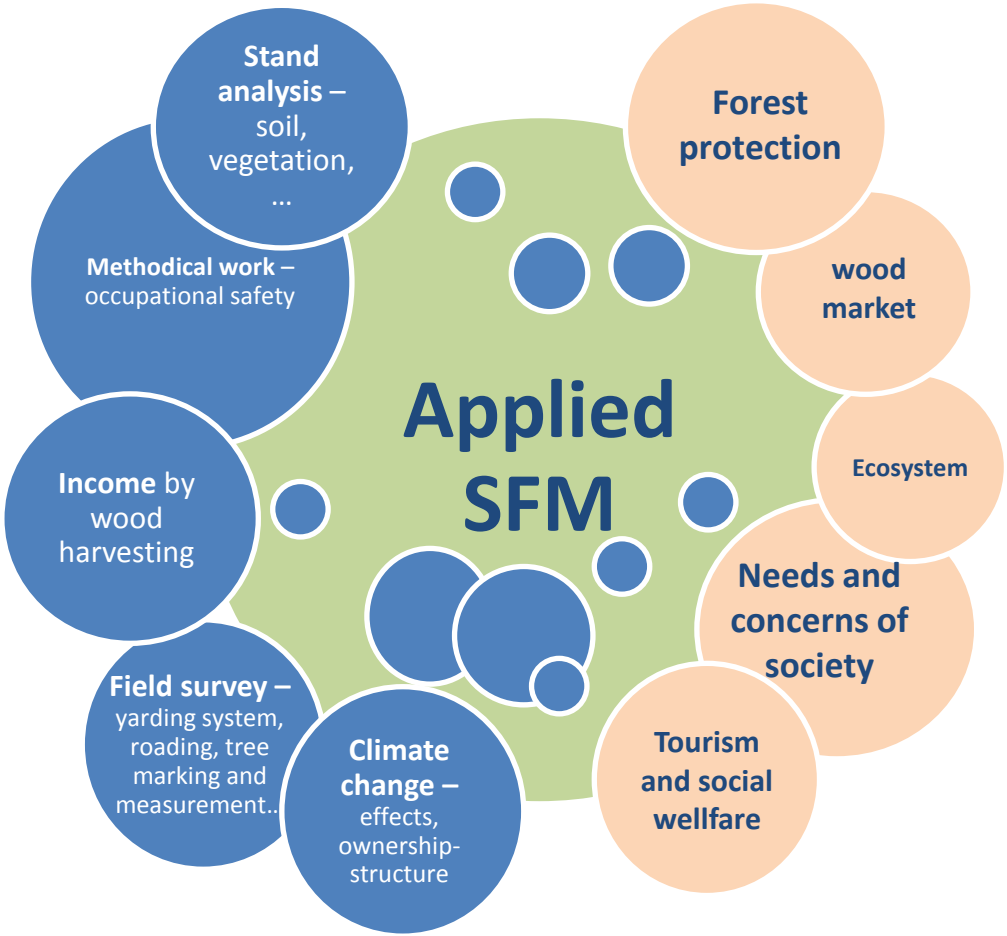


- Forest and Sustainable Forest Management
- Forest and Biodiversity
- Forest and Climate Change
- Forest and Water
- Forest and Natural Hazards

…Research and Formation within these topics!

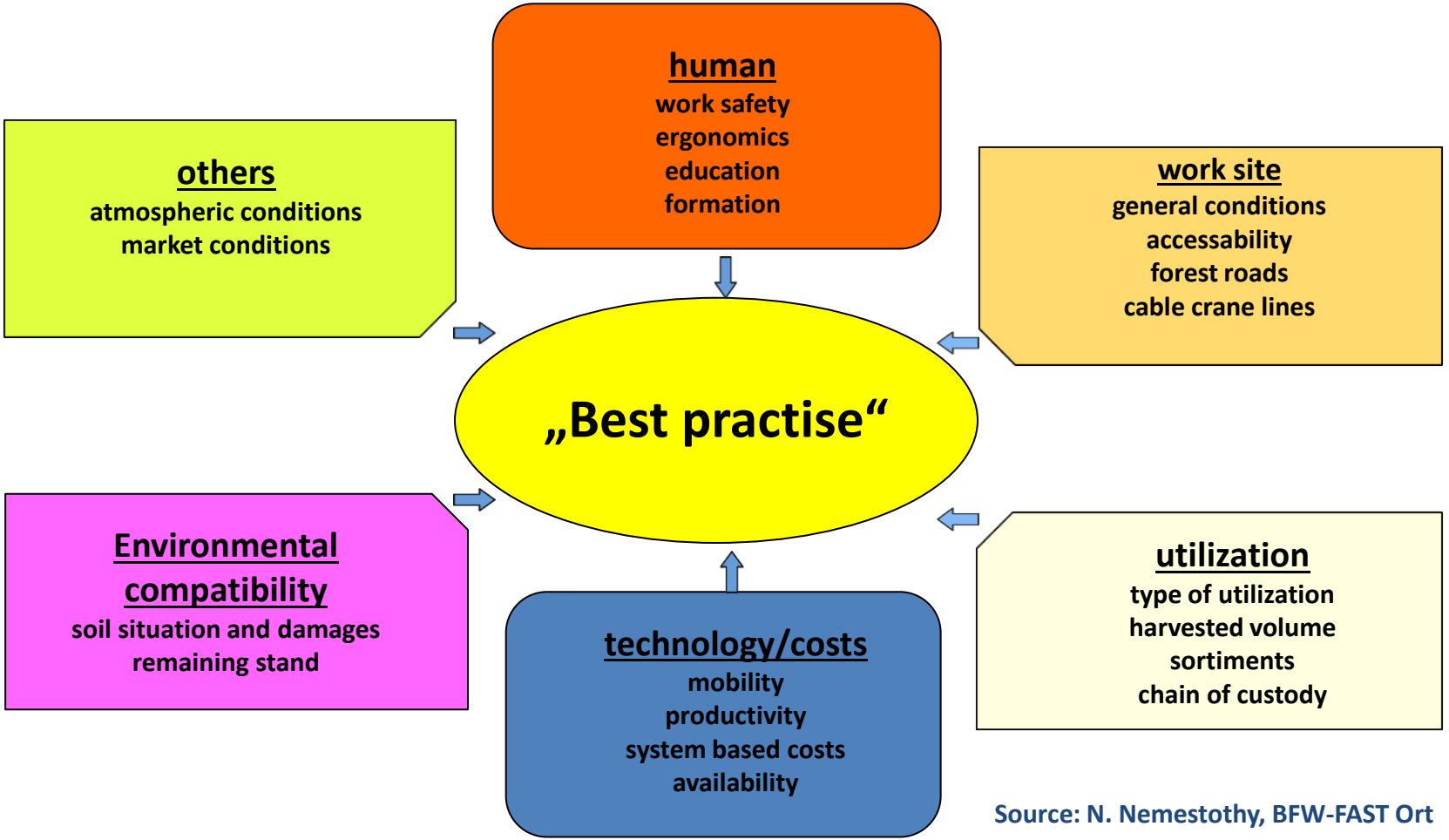
BFW
FORSTLICHE AUSBILDUNGSSTÄTTE
Ossiach

Challenge Multifunctionality…



Lots of factors are influencing SFM…
Need of
knowledge
and **skills**!

BFW
FORSTLICHE AUSBILDUNGSSTÄTTE
Ossiach

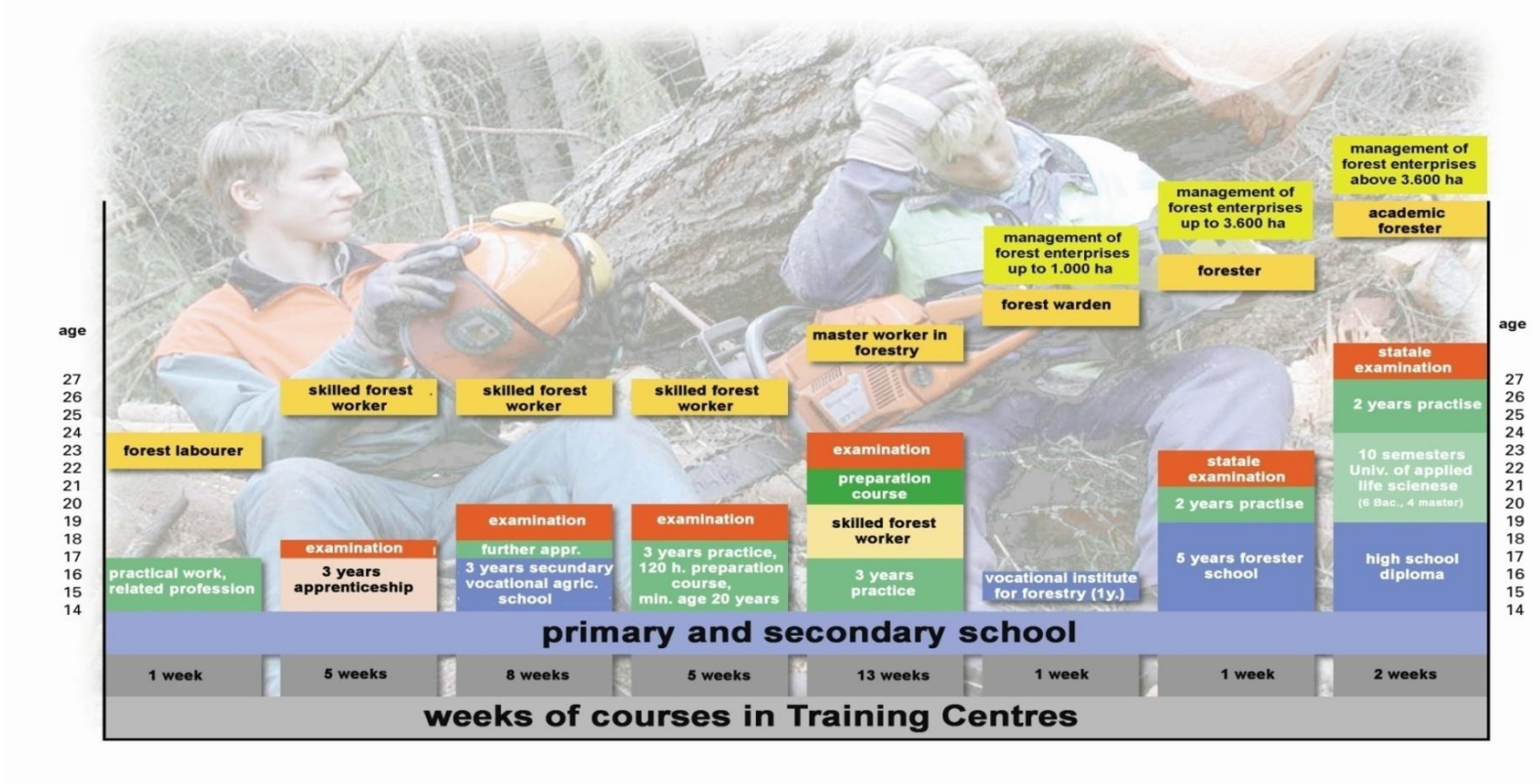


Source: N. Nemestothy, BFW-FAST Ort

BFW
FORSTLICHE AUSBILDUNGSSTÄTTE
Ossiach

Educational system in Austrian Forestry

the higher the level of formation the higher is the possibility of application of e-learning



BFW
FORSTLICHE AUSBILDUNGSSTÄTTE
Ossiach

1. VARIATIONS OF LEARNING

BFW
FORSTLICHE AUSBILDUNGSSTÄTTE
Ossiach

LLL…Formal, non-formal and informal – three terms and definition

- **formal learning:** specific, defined curricula, mostly in accredited institutions, official accredited certificate
- **non-formal learning:** specific, mainly in courses, seminar etc., often non officially accredited certificate
- **informal learning:** can be non-intentional, out of everyday-life (spare-time, workingplace,…), no certificate

BFW
FORSTLICHE AUSBILDUNGSSTÄTTE
Ossiach

Distance learning methods…

- **E-Learning…**
  is electronic learning, typically delivered via computers to enable courses to be more accessible. This allows **theoretical subjects** to be delivered to learners who can't attend classroom based teaching and thus reduce barriers to learning that may exist for some.

- **Written material, e-journals**
  Distance learning via written material is home-based learning, typically delivered via learning packs that are sent to your home. This allows the **theory content of any qualification** to be delivered to learners who wish to study at home at a place more suited to them.

- **Television programming**
  Involves a series of television programmes which are designed to convey the **techniques and theory**. These could be broadcast via cable or terrestrial channels or provided on video tape or DVD. (Webinar = web-based seminar)

Source:

BFW FORSTLICHE AUSBILDUNGSSTÄTTE Ossiach

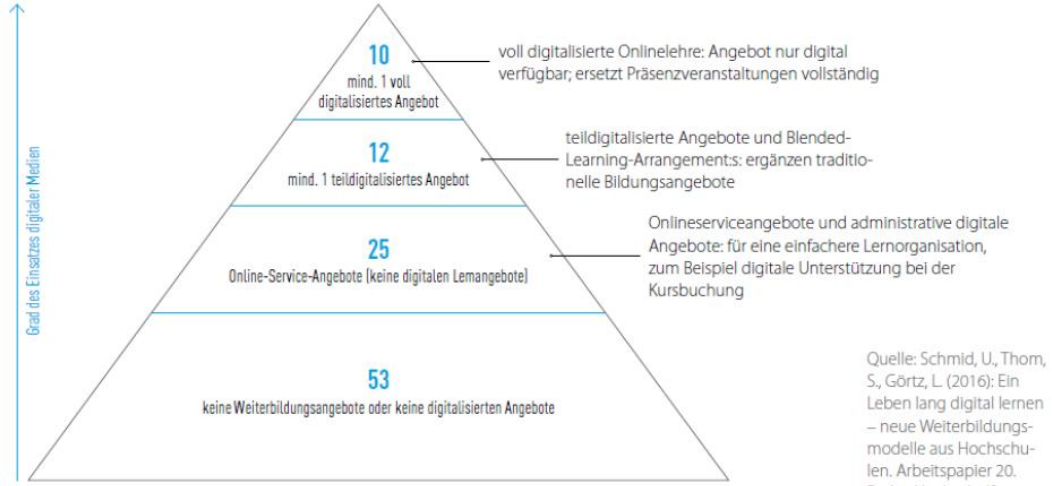
RFS ROYAL FORESTRY SOCIETY INSPIRING PASSION AND EXCELLENCE IN WOODLAND MANAGEMENT

E-learning and universities - Germany

Universität für Bodenkultur Wien

Einsatz digitaler Technologien in der Weiterbildung – Stand 2016 in Deutschland

Abbildung 3: Digitalisierungsniveaus akademischer Weiterbildungsangebote: Anteile der vier Strategietypen, in Prozent



Anzahl der untersuchten Hochschulen/Weiterbildungsanbieter: N = 402

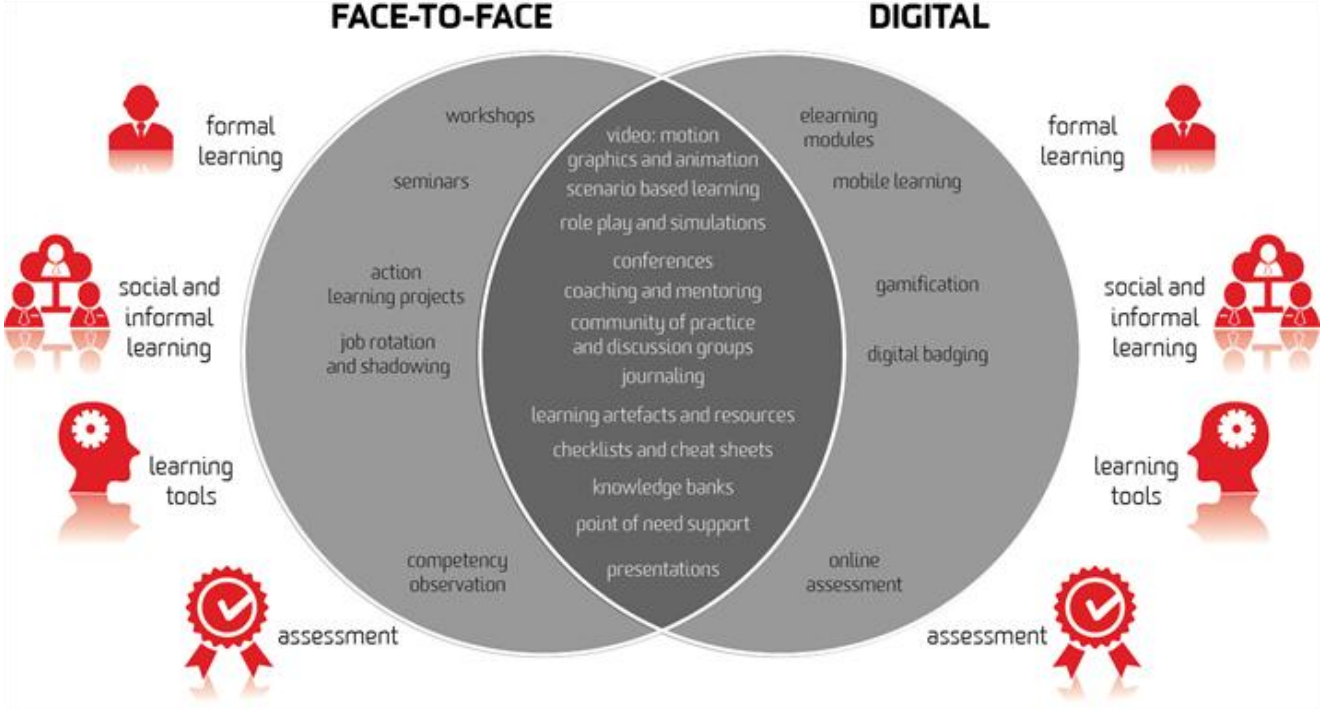
Quelle: Schmid, U., Thom, S., Görtz, L. (2016): Ein Leben lang digital lernen – neue Weiterbildungsmodelle aus Hochschulen. Arbeitspapier 20. Berlin: Hochschulforum Digitalisierung. S. 49.

BFW FORSTLICHE AUSBILDUNGSSTÄTTE Ossiach

2. BLENDED LEARNING

BFW
FORSTLICHE AUSBILDUNGSSTÄTTE
Ossiach

Blended learning methods…



Source: http://deakinprime.com

BFW
FORSTLICHE AUSBILDUNGSSTÄTTE
Ossiach

Blended learning methods…

The new way to learn (?) - integrated and holistic process.

It's now acknowledged that when it comes to learning, around:

70% comes from **on-the-job experience**

20% is **social** (peers and mentors)

10% comes from **formal learning** (classroom, e-learning modules,…)

Source: http://deakinprime.com

BFW
FORSTLICHE AUSBILDUNGSSTÄTTE
Ossiach

3. E-learning and examples…

A. …Occupational safety

B. …Modern technology

C. …Ecosystem management

BFW
FORSTLICHE AUSBILDUNGSSTÄTTE
Ossiach

A. OCCUPATIONAL SAFETY

BFW
FORSTLICHE AUSBILDUNGSSTÄTTE
Ossiach

Occupational safety

- Accidents **don‘t happen**, accidents **are caused**!
- **90 – 95% of all accidents would be avoidable**, if
  …safety standards would be respected
  …the organisation of work-site would be adequat
  …misbehaviour could be excluded!

BFW
FORSTLICHE AUSBILDUNGSSTÄTTE
Ossiach

Occupational safety – actions 2015 (2017)

Forest-accidents: 1.563 (1.437)
Fatal: 28 (14)

	SVB		AUVA	
	number	fatal	number	fatal
Total	822 (764)	21 (13)	741 (673)	7 (1)
Work with chainsaw	192	5	81	0
Felling	140	3	230	5
Processing	202	2	226	0
Movement	74	6	109	0
Logging and transport	188	4	43	0
Handling of engine	20	1	25	0
Other	6	0	27	2

BFW
FORSTLICHE AUSBILDUNGSSTÄTTE
Ossiach

Utilization of wood in Austria

- 45 % chainsaw, tractor, skidder
- 25 % cable yarders, chainsaw
- 25 % Forwarders (partly chainsaw)
- 5 % other
- *15-20 % Harvester (fully mechanized)*

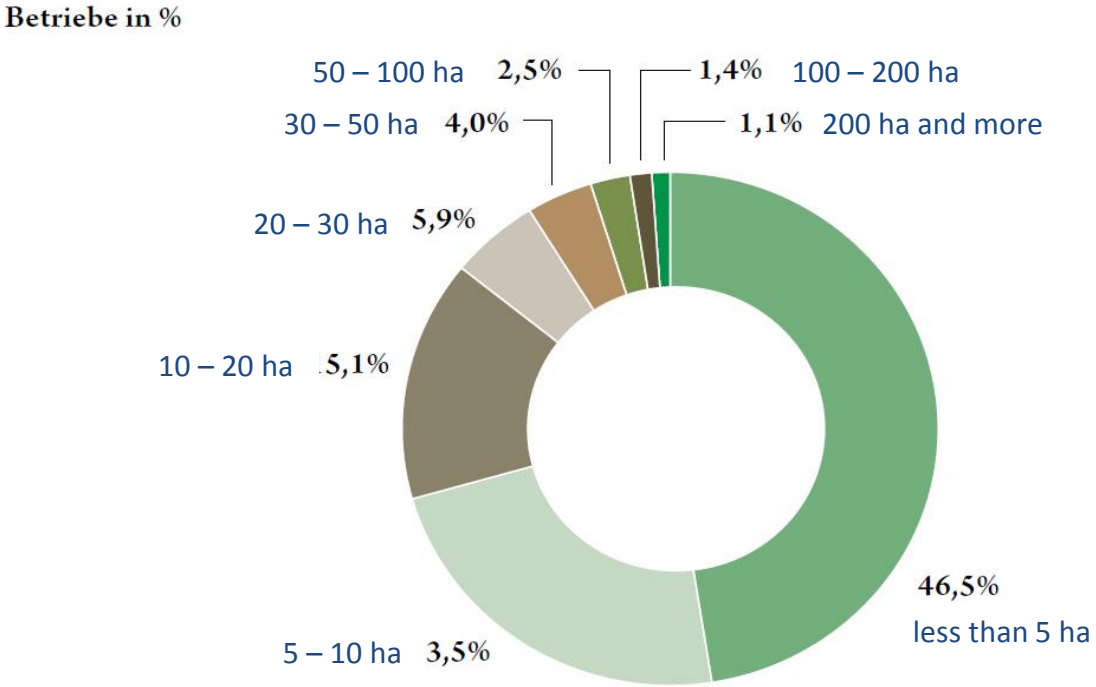
Only in **15-20 %** of the total amount of harvested wood the chainsaw is more or less **NOT** needed!

(OCCUPATIONAL SAFETY!)

BFW
FORSTLICHE AUSBILDUNGSSTÄTTE
Ossiach

Structure of ownership…

Size-categorie concerning forest-area per property



95 % of all properties have a forest-area beyond 50 hectars!

BFW
FORSTLICHE AUSBILDUNGSSTÄTTE
Ossiach

What would fit e-learning?

- Risk awareness (basics…)
- Risk zone definition (depending on technology)
- Basics of planning-processes
- Safety clothing and equipment
- …
- *Method: film-sequences, web-seminar, e-journals, …*

BFW
FORSTLICHE AUSBILDUNGSSTÄTTE
Ossiach

B. MODERN TECHNOLOGY

BFW
FORSTLICHE AUSBILDUNGSSTÄTTE
Ossiach

Fully mechanised harvesting operation…

BFW
FORSTLICHE AUSBILDUNGSSTÄTTE
Ossiach

What would fit e-learning-modules?

- Risk zone definition and awareness (depending on technology)
- Basics of planning-processes (extraction lines…)
- Liability and legal regulations
- Standards
- …
- *Method: simulators, film-sequences, web-seminar, e-journals, presentations,…*

BFW
FORSTLICHE AUSBILDUNGSSTÄTTE
Ossiach

Fully mechanised harvesting operation…

BFW
FORSTLICHE AUSBILDUNGSSTÄTTE
Ossiach

C. ECOSYSTEM MANAGEMENT

BFW
FORSTLICHE AUSBILDUNGSSTÄTTE
Ossiach

Influence on ecosystem…

Extraction lines can increase the danger of surface run-off and erosion.

One has to experience this!

Images: Lüscher et al., 2010

BFW
FORSTLICHE AUSBILDUNGSSTÄTTE
Ossiach

What would fit e-learning-modules?

- Basic knowledge transmission
- Legislatives and regulations
- Definitions and standards
- …
- *Method: film-sequences, web-seminar, e-journals, presentations,…*

BFW
FORSTLICHE AUSBILDUNGSSTÄTTE
Ossiach

4. PROS AND CONS OF E-LEARNING

BFW
FORSTLICHE AUSBILDUNGSSTÄTTE
Ossiach

Inquiry at other FTC's in Austria:

E-learning applied?

- **Intense thinking-process on going, but no findings so far…**
- **E-learning unit developed within an European project, not used anymore.**
- **Ongoing discussion at the moment**
- **Blended learning as a good alternative** (combination of presence and direct contact with trainer and some e-learning moduls)
- **Difference:** information, knowledge, skills **(!!!)**

BFW
FORSTLICHE AUSBILDUNGSSTÄTTE
Ossiach

Conlusion – (1): e-learning pros

- **E-learning** can be helpful in acquisition of **knowledge** (forest legislation modules, basic instructions in occupational safety, cost-calculation,…)
- **E-learning** can (partly) support/substitute frontal lectures
- **Blended learning as a combination of e-learning modules, simulators, film-sequences and presence of trainers** could bring enhancement of usage of modern technology
- **Short sequences** of **films** could bring awareness for risk-analysis and occupational safety.
- **Independency** of location and time of lesson
- New target-groups?

BFW
FORSTLICHE AUSBILDUNGSSTÄTTE
Ossiach

Conclusions – (2): e-learning cons

- E-learning can NOT substitute a trainer-trainee relation
- E-learning can NOT properly support the process of gaining skills
- E-learning can NOT be done by the trainees alone, there must be an intense companionship
- E-learning can NOT transmit social competences
- E-learning needs infrastructure
- E-learning needs competence in IT

BFW
FORSTLICHE AUSBILDUNGSSTÄTTE
Ossiach

Conclusions – (3): e-learning…

- **We are dealing with nature and human beings**
- **Nature doesn`t have standardised circumstances** (like mechanical workshops have…)
- **We are dealing with very dangerous work-sites** (in videos/simulations you can only get an idea of what tension in stems means…)
- **It`s a privilege for trainees to have a skilled person and trainer on their side!**
- **We are dealing with human-resources**

BFW
FORSTLICHE AUSBILDUNGSSTÄTTE
Ossiach

Picture | Filmstyle from „See Aural Woods" (Luma.Launisch & Takamovsky)

Federal Research and Training Centre for Forests,
Natural Hazards and Landscape
Forest Training Centre Ossiach

Ossiach 21
9570 Ossiach, Austria
Tel.: +43-(0)4243-2245-0
fastossiach@bfw.gv.at
http://www.fastossiach.at

https://www.facebook.com/BundesforschungszentrumWald

https://twitter.com/bfwald

https://www.youtube.com/user/Waldforschung