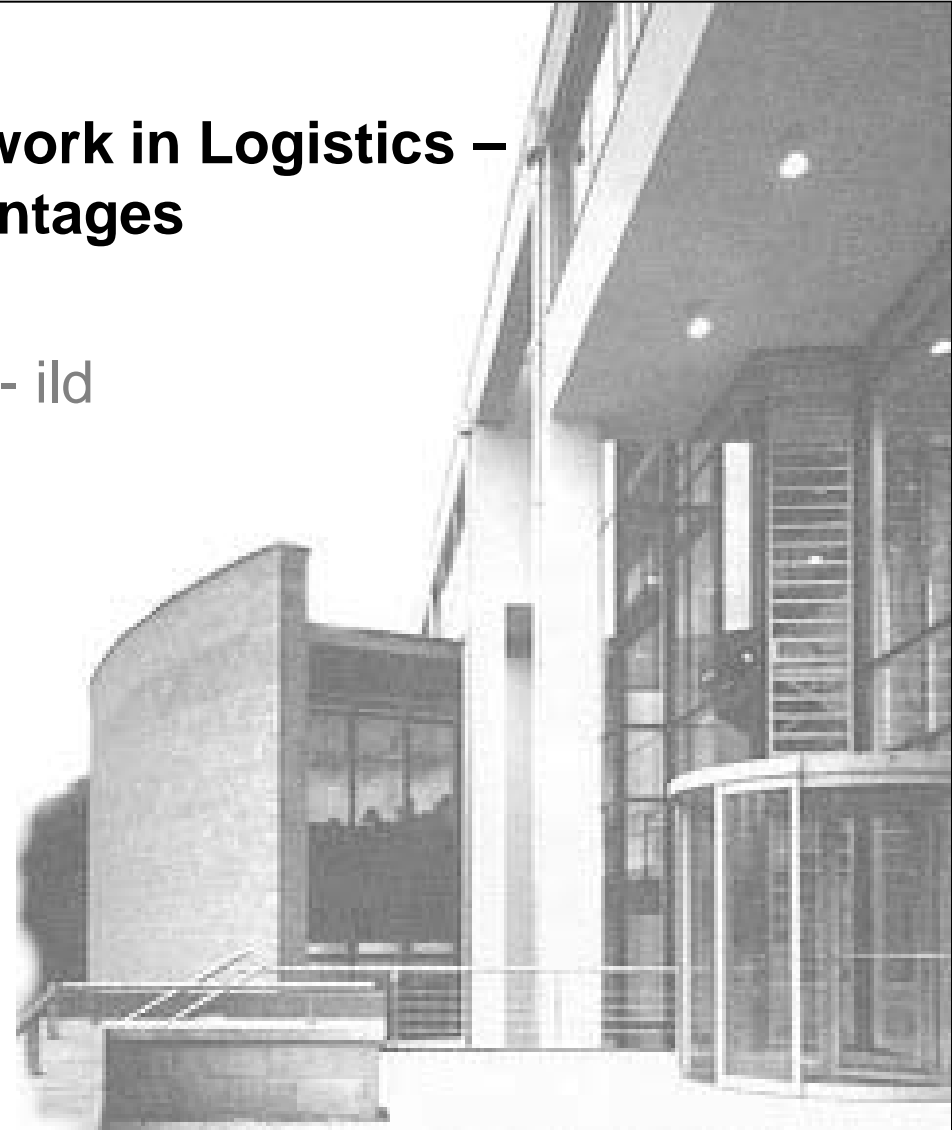


Sectoral Qualifications Framework in Logistics – Problems, Concepts and Advantages

Prof. Dr. Matthias Klumpp, FOM - ild
Istanbul, 15.12.2010



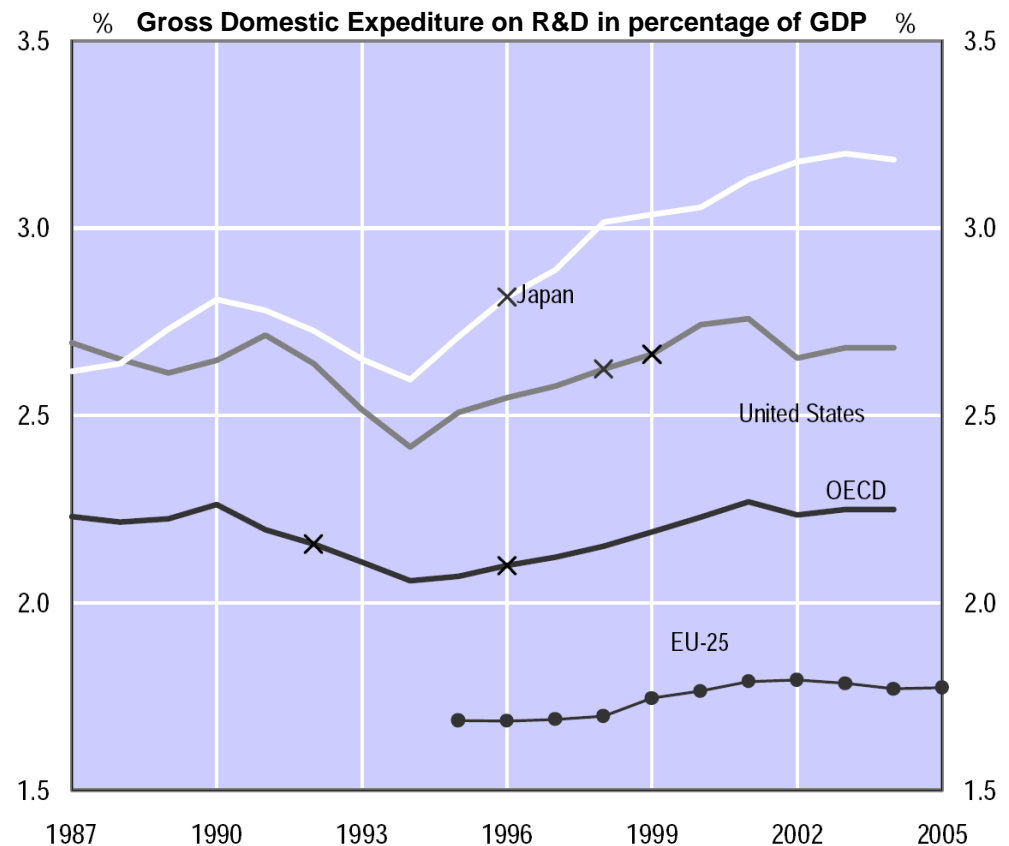
Istanbul Technical University
ERASMUS Guest Lecture



1. Introduction
2. Qualification Frameworks
3. Survey Results
4. Draft SQF Logistics
5. Implications & Conclusion

- **Innovation** needs **personnel qualifications** in order to implement new products, processes and strategies in logistics
- **Qualifications** can be obtained by companies via internal development or external acquisition – in any case: individual persons have to learn
- Besides company and individual motivation, **framework conditions** play an important role for qualification results
- A major education trend are **qualifications frameworks**
- **Research question:** What are problems and contributions from existing research (Berufswertigkeit and Graduate Surveys FOM) towards a sectoral qualifications framework logistics?

- **General Objective:** Increasing economic **competitiveness** through research/innovation/knowledge (benchmarking view)
- European research funding **initiatives**
- **Excellence** discussion
- Forward **“push“**
- **Education** as basis
- **Staff education** as main input for competitiveness



Source: (OECD) (2006): Main Science and Technology Indicators 2006-2, Paris, page 3.

- **Objective:** Economic competitiveness through education / research
- **Question:** How to broaden the base of education facing demographic change?
- **Access:** Age Groups & Movement

Source: European University Association (2007):
Lisbon Declaration, Paris, page 2.

3 **A diversified university system:** Universities recognize that moving from an elite to a mass system of higher education implies the existence of universities with different missions and strengths. This requires a system of academic institutions with highly diversified profiles, based on equality of esteem for different missions. Institutions will increasingly offer different kinds of study programmes leading to a wide spectrum of graduate qualifications that allow progression routes from one institution to another and will develop research, innovation and knowledge transfer activities in line with their diverse missions.

5 **Universities and an inclusive society:** Europe's universities accept their public responsibility for promoting social equity and an inclusive society. They are making great efforts to widen the socio-economic basis of their student populations; they are dedicated to ensuring access and giving opportunities to succeed to all those who are qualified and have the potential to benefit from higher education. Success in this task requires partnership with governments and other parts of the educational system.

10 Major Task/Objective: **Lifelong Learning**

2. Qualification Frameworks

European Qualifications Framework (EQF)

The **European Qualifications Framework** is a tool to increase the **transparency** of qualifications across Europe.

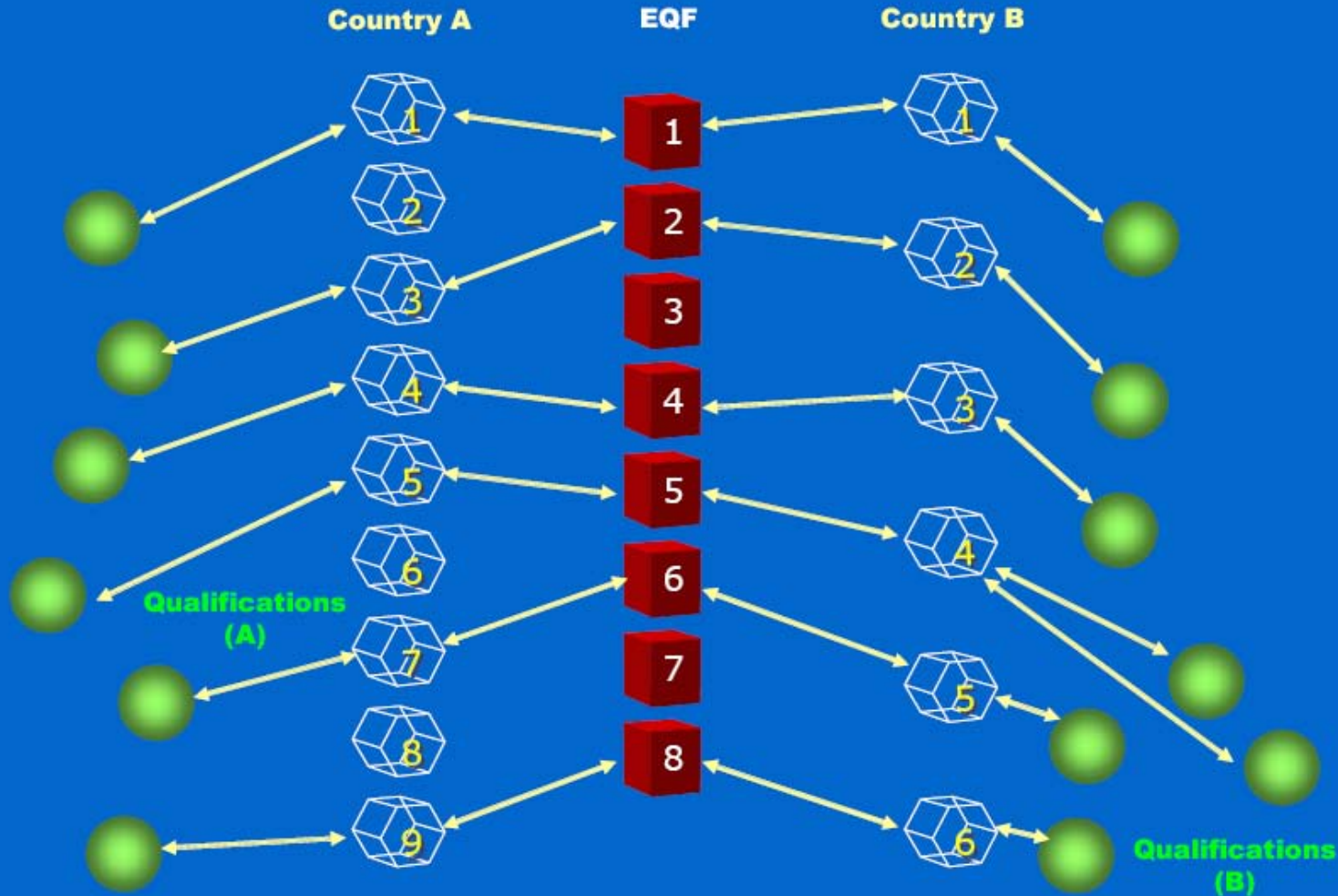
Lisbon strategy or the connection of **Bologna** and **Copenhagen** processes supported by EQF and ECTS/ECVET

- based on **learning outcomes**
 - + knowledge, skills, competences (KSC)
- centered on qualifications
- emphasis on **lifelong learning**
- focused on mobility
- transparency oriented



2. Qualification Frameworks

European Qualifications Framework (EQF)



Source: Commission of the European Union (2005): Auf dem Weg zu einem Europäischen Qualifikationsrahmen, Brussels, page 16.

1999 **Bologna process**: "...creation of a common European **Higher Education** Area until 2010."

ECTS for higher education:

- ECTS is the furthest advanced project of the European union to create different national education systems and **education standards**
- Since for the entire education range within the European union a harmonization prohibition is valid, all relevant goals, initiatives and process are based on voluntary and in certain degree also noncommittal **co-operation** of the member states
- Regardless of this European legal definition the ECTS process contributed to one of the largest **transformation processes** in the German university landscape
- The ECTS refers to training in the **tertiary sector**, thus to study programs and degrees at universities

ECVET is a system of point of achievement for **vocational training**

- Which is developed at present in the European framework
- School learning achievements, vocational education, additional individual vocational experiences and learning processes are to be illustrated in a uniform scoring system

Goals of the ECVET:

- Use of a European-wide uniform assessment basis for qualifications and learning results
- Transparency of learning careers
- Transnational mobility is to be promoted
- Entrance to lifelong learning is to be supported and facilitated thereby

* European Credit Transfer [and Accumulation] System

** European Credit System for Vocational Education and Training

2. Qualification Frameworks

European Qualifications Framework (EQF)

	EQF-Level	1	2	3	4 - 7	8
knowledge	in the context of EQF, knowledge is described as theoretical and/or factual	- basic general knowledge	- basic factual knowledge of a field of work or study	- knowledge of facts, principles, processes and general concepts, in a field of work or study	:	- knowledge at the most advanced frontier of a field of work or study and the interface between fields
skills	in the context of EQF, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) and practical	- basic skills required to carry out simple tasks	- basic cognitive and practical skills required to use relevant information in order to carry out tasks and to solve problems using simple rules and tools	- a range of cognitive and practical skills required to accomplish tasks and to solve problems by selecting and applying basic methods, tools, materials and information		- demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study contexts including research
competence	in the context of EQF, competence is described in terms of responsibility and autonomy	- work or study under direct supervision in a structured context	- work or study under supervision with some autonomy	- take responsibility for completion of tasks in work or study - adapt own behavior to circumstances in solving problems		- demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study contexts including research

3. Survey Results - Graduates

<i>Competence</i>	<i>Average Acquirement Rating (n = 158)</i>	<i>Average Requirement Importance (n = 140)</i>	<i>Difference</i>	<i>Average Importance Mark</i>	<i>Selection Criteria (n = 114)</i>
Computer Skills	1,6	1,5	-0,1	1,6	Personality of Graduate
Subject-related Competence	2,0	1,6	-0,4	1,8	Practical Experience
Flexibility / Adjustment Capacity to Changes	1,9	1,6	-0,3	2,1	Computer Skills
Efficient Objective Orientation	1,9	1,6	-0,3	2,3	Field of Study
Efficient Self- and Process Organisation Capability	2,0	1,6	-0,4	2,4	Graduation Level (BA/MA/PHD)
Capability of Working under Pressure / Time Restrictions	1,7	1,6	-0,1	2,5	Specialization Subject
Economic Thinking, Planning and Acting	1,9	1,7	-0,2	2,5	Special Study Program (part-time)
Capability for Productive Teamwork	1,9	1,7	-0,2	2,6	Foreign Language Skills
Capacity to Develop new Ideas and Solutions	2,0	1,8	-0,2	2,9	References from Third Parties

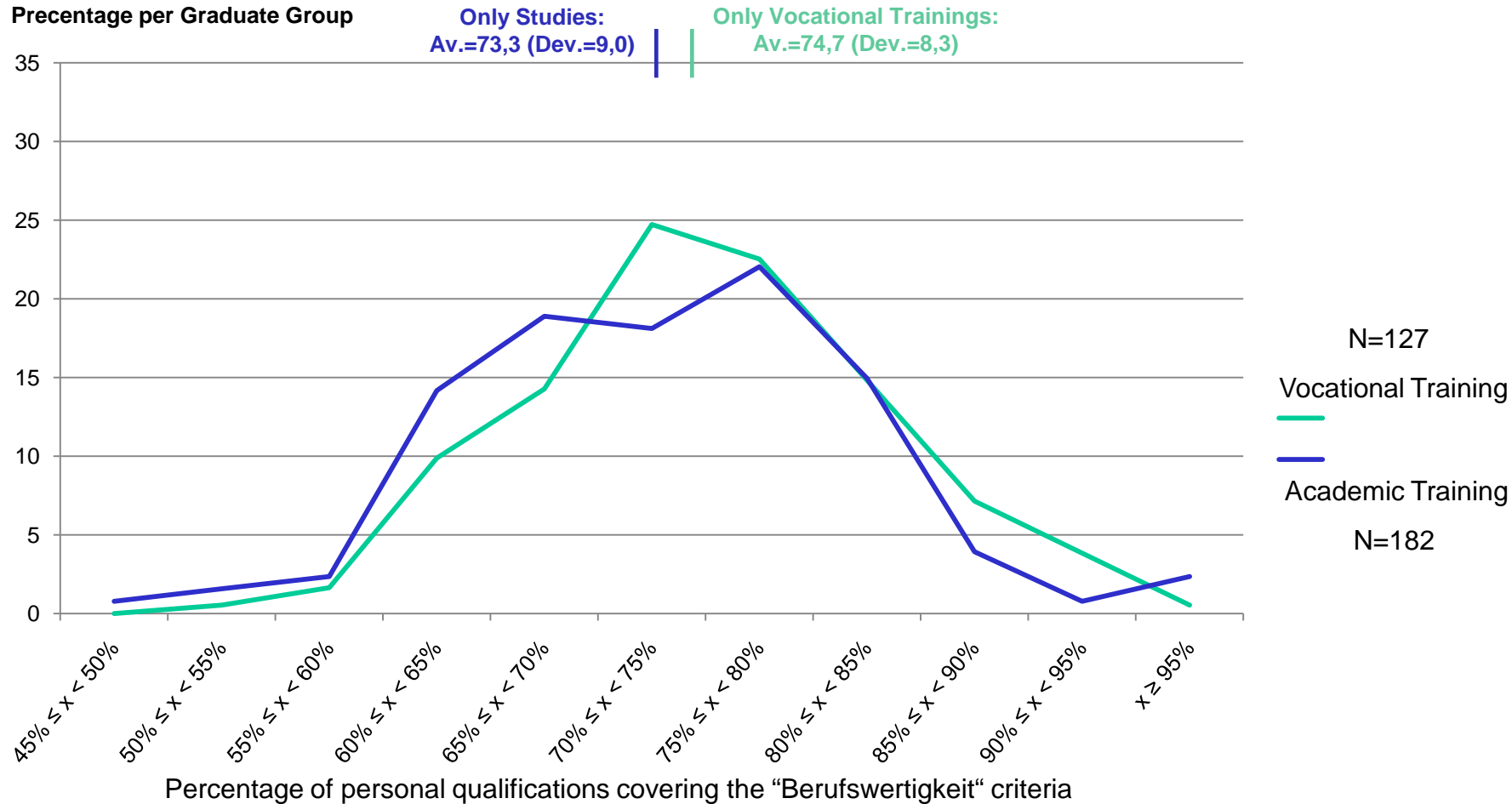
3. Results - Berufswertigkeit

- **Berufswertigkeit** implies the requirements of workplaces (here: management personnel) – i.e. the „everyday working environment“. These requirements are evaluated by HR professionals (800 companies, NRW Germany).
 - The concept brings advantages to existing discussion schemes as **third (objective) measurement concept** in reference to existing education and curricula as well as certification.
- Explicitly **Employment / Work Focus**
- **Objective** Discussion Input

3. Results - Berufswertigkeit

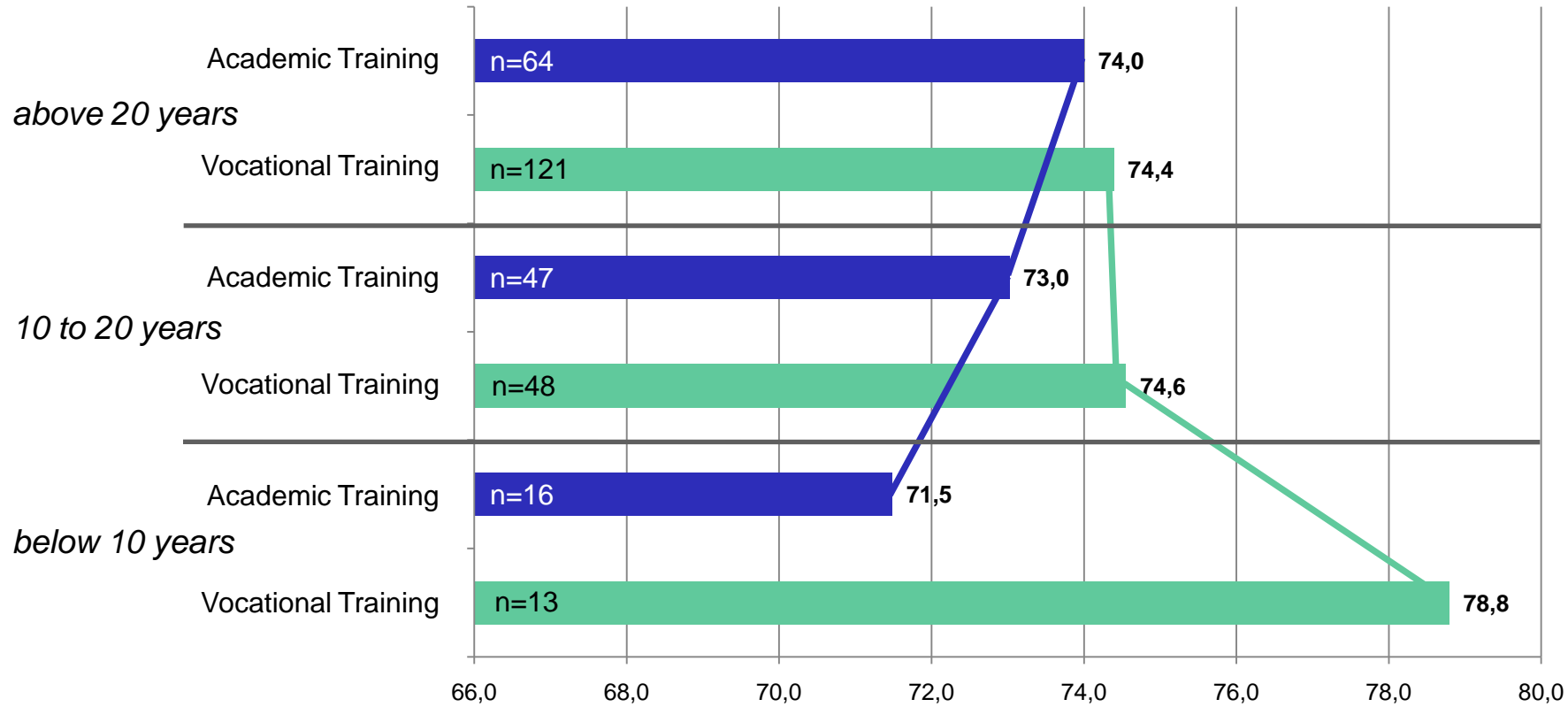
- **Berufswertigkeit** criteria (examples), altogether 36 items:
 - Loyalty
 - Flexibility
 - Creativity
 - Endurance / Stamina
 - Motivation and Ability for Life Long Learning
 - Improving Responsible Care (at the Workplace)
 - Intercultural Competences / Language Competences
 - Application Competences in modern ICT/Media Technologies
 - ...

Research Findings: Similar competence levels academic/VT



3. Results - Berufswertigkeit

■ **Research Findings:** Task of LLL getting more important



Ageing Competence: Berufswertigkeit level by age / work experience (left side)

4. Draft SQR Logistics

- **First draft** with general but logistics-specific definitions for all eight levels

Level	1	2	3	4
EQF/NQF Descriptors (EC, 2008)	He/she has basic skills required to carry out simple tasks; addressed competences allow to work under direct supervision in a structured context	He/she has basic cognitive and practical skills required to use relevant information in order to carry out tasks and to solve routine problems using simple rules and tools; competences allow to work under supervision with some autonomy	He/she has a range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information; competences allow to take responsibility for completion of tasks in work and adapt own behavior to circumstances in solving problems	He/she has a range of cognitive and practical skills required to generate solutions to specific problems in a field of work; competences allow to exercise self-management within the guidelines of work in contexts that are usually predictable, but are subject to change and supervise the routine work of others, taking some responsibility for evaluation / improvement of work activities
Descriptors Logistics (Draft)	He/she has basic skills to carry out simple logistics operations under strict supervision like transport, transition handling, warehousing and picking activities in structured and stable contexts	He/she has basic cognitive and practical skills required to solve routine problems under supervision with some autonomy like basic logistics planning and administrative activities including standard paperwork e.g. transport documents	He/she has cognitive and practical skills required to accomplish tasks and solve problems by applying basic methods in order to take responsibility for completion of tasks and adapt like in logistics transport and warehouse planning, calculation and complex document finishing e.g. customs or multimodal transport documents	He/she has cognitive and practical skills required to generate solutions to specific problems by exercising self-management in contexts that are usually predictable, but changing supervise routine work of others. partial redesign of a supply chain or planning a new inbound / outbound routing destination as well as simple technology / IT tasks

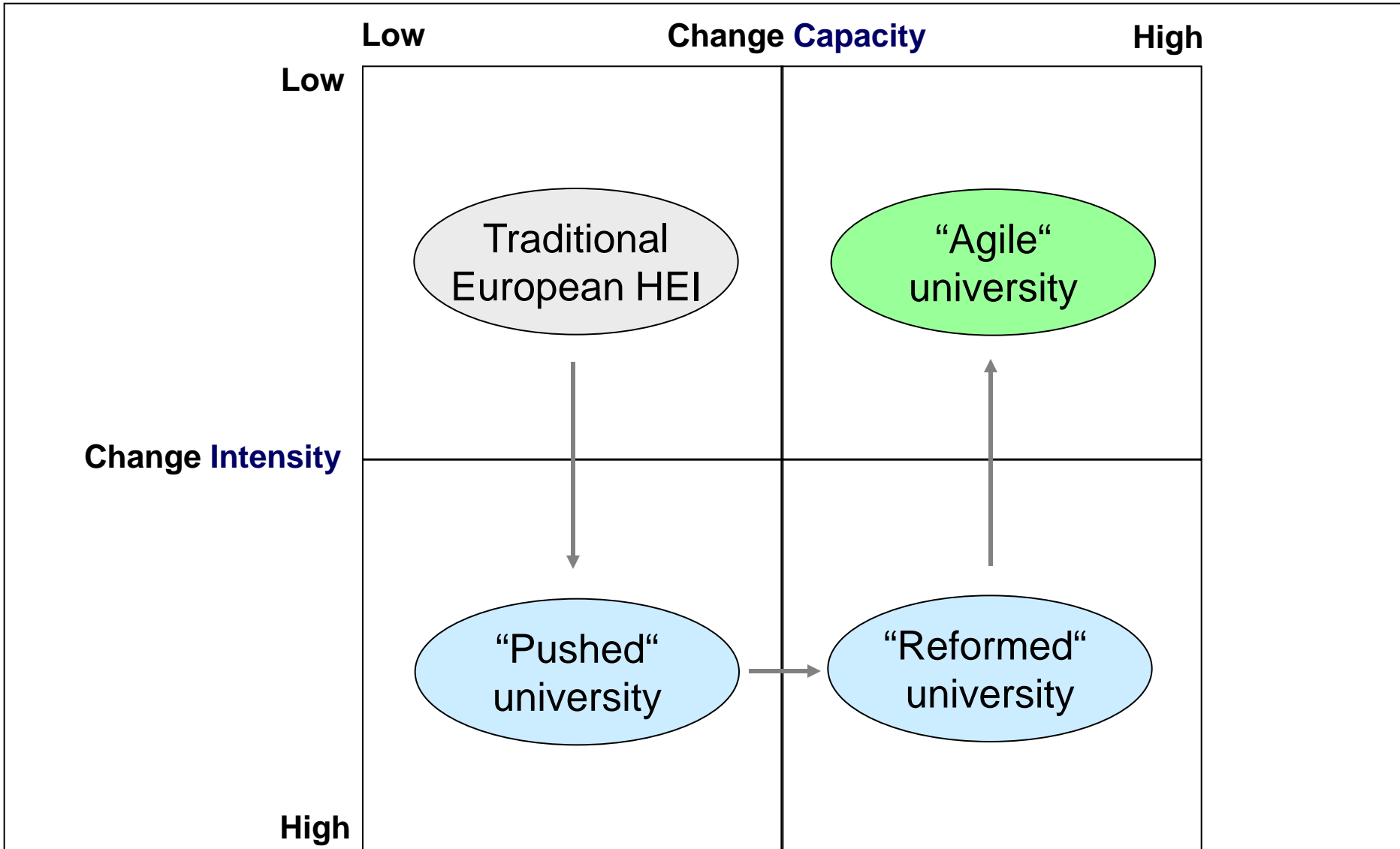
4. Draft SQR logistics

Level	5	6	7	8
<p>Descriptors Logistics (Revised Draft)</p>	<p>He/she has cognitive and practical skills required to develop creative solutions to abstract problems and to exercise management and supervision in contexts of work activities with unpredictable change and review and develop performance of self and others like leading a logistics team or department, develop and present a logistics project/concept or analyze and manage risks in logistics processes (with long-term and international logistics experience)</p>	<p>He/she has advanced skills required to solve complex and unpredictable problems in a specialized field of work allowing to manage complex technical or professional activities or projects with decision-making in unpredictable work contexts and take responsibility for managing professional development of individuals/groups like managing a logistics site, analyzing and planning a complex task e.g. CO₂ calculation, product pricing or managing logistics outsourcing or international logistics projects (with at least minimal leadership experience)</p>	<p>He/she has specialized problem-solving skills required in research and/or innovation in order to develop new knowledge / procedures and to integrate knowledge from different fields allowing to manage and transform complex and unpredictable work contexts and reviewing strategic performance of teams for example management of a logistics company or management of a network built-up or ramp-up project with international affiliations including technological, procurement and IT decisions as well as planning and supervising logistics research and consulting projects (with long-term leadership experience in logistics)</p>	<p>He/she has most advanced skills, including synthesis / evaluation, required to solve critical problems in research / innovation and to redefine knowledge or practice in logistics allowing him/her to demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and commitment new ideas or processes at the forefront of work contexts including independent planning and supervision of large logistics companies, logistics research or consulting projects with several international networks and implications, communicating also with industry, trade and politics (with long-term leadership experience in international logistics)</p>

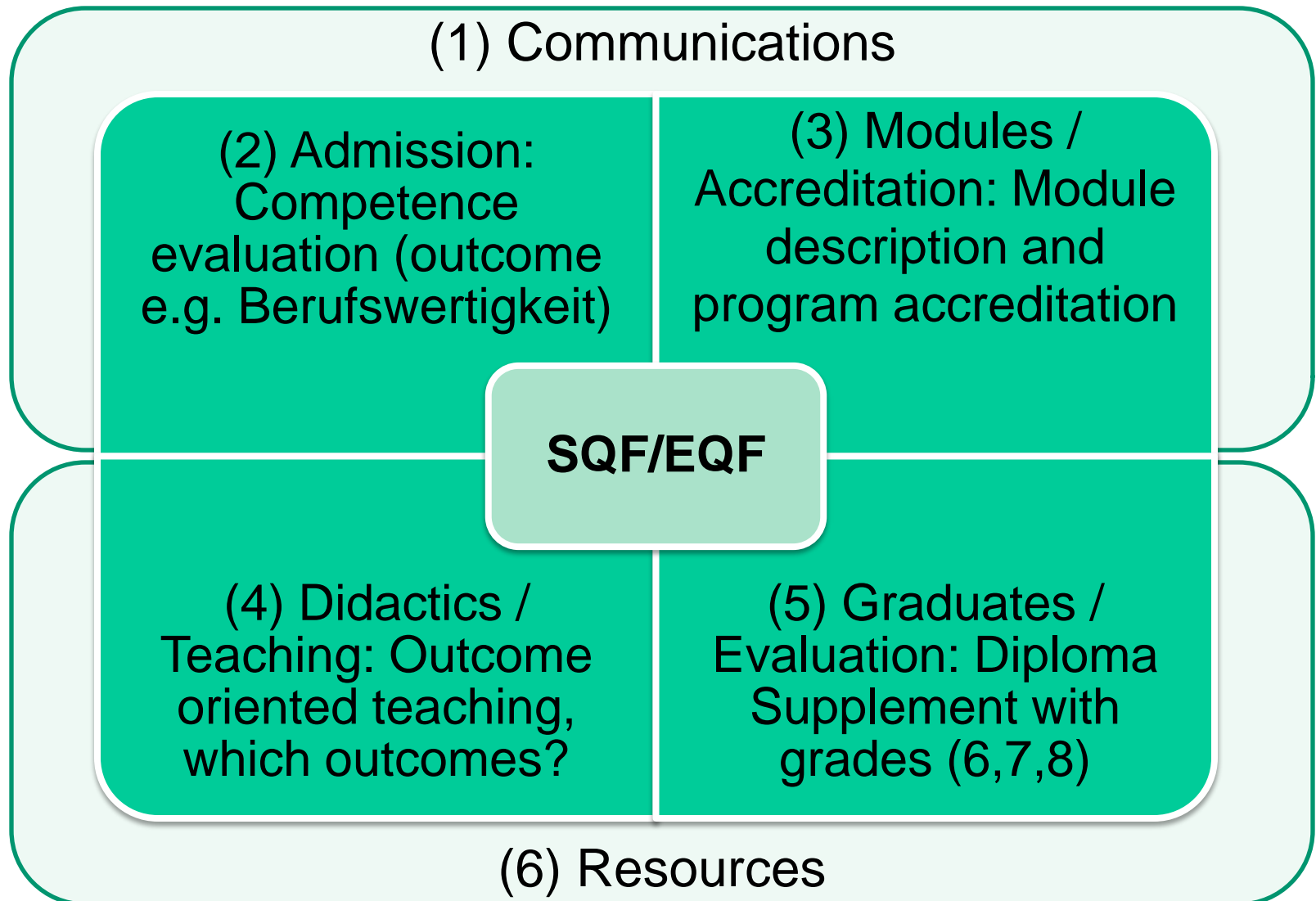
- New amendments** to existing SQR draft based on empirical research

To be further extended in a BMBF research project in the LogistikRuhr Excellence Cluster from 2011

5. Implications & Conclusions



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5. Implications & Conclusion

- Qualifications frameworks are an **important tool** to facilitate education, especially continuing education (lifelong learning).
- In logistics especially **SME** would profit from an industry-wide introduction and use of SQR (transparency, lowering transaction costs).
- An SQR logistics would also increase the **overall attractiveness** of the logistics industry for high-qualified and motivated personnel.
- Education **institutions** have to adapt & change (outcomes, diversity).
- Further research is needed for reaching an all-encompassing, accepted SQR logistics – as well as **international dialogue** among researchers and with practitioners.

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Thank you very much
for your attention.

