

# The shift from teaching to learning

Was the reform  
of forest academic education  
successful ?

# The importance of education...

Most political programs demand  
better education and more  
investments in education



Why ?

## *Better education, because...*

Individual level

- higher income
- better quality of life
- higher degree of personal satisfaction

Societal level

- general quality feature of a population  
(nation, state)
- less conflicts under educated people  
(better ways to solve problems)
- better economy (job market)

The *United Nations* declare  
the period 2005 – 2014 as the



„Decade for  
Education of  
Sustainable  
Development“

Independent of the political orientation of political parties:

All agree in more  
Investment in education

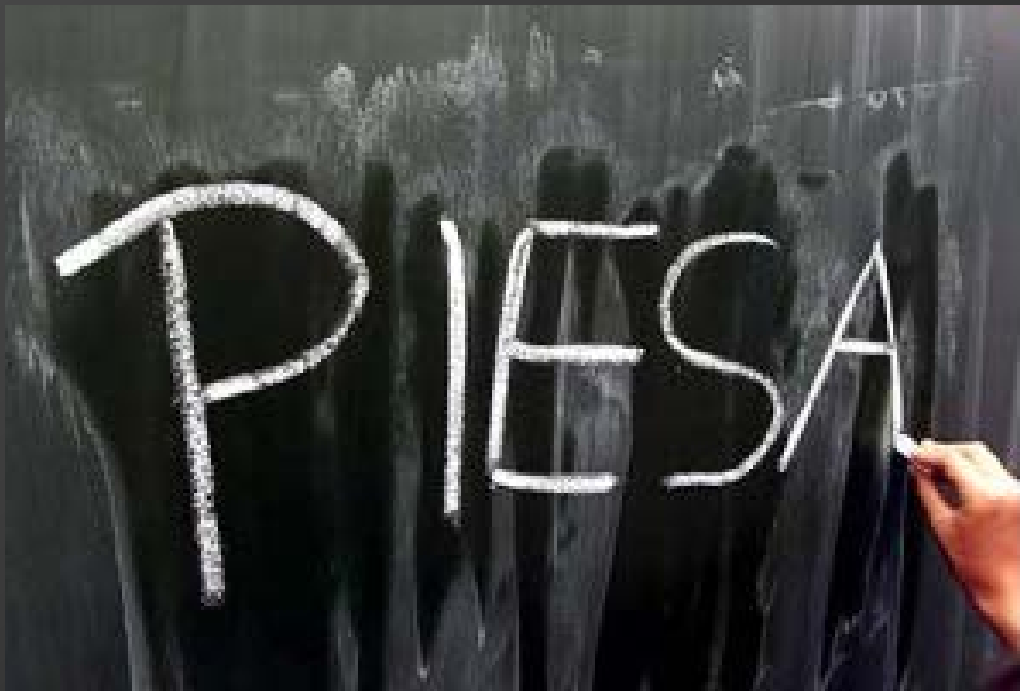
but

they disagree in form and  
contents of the best education

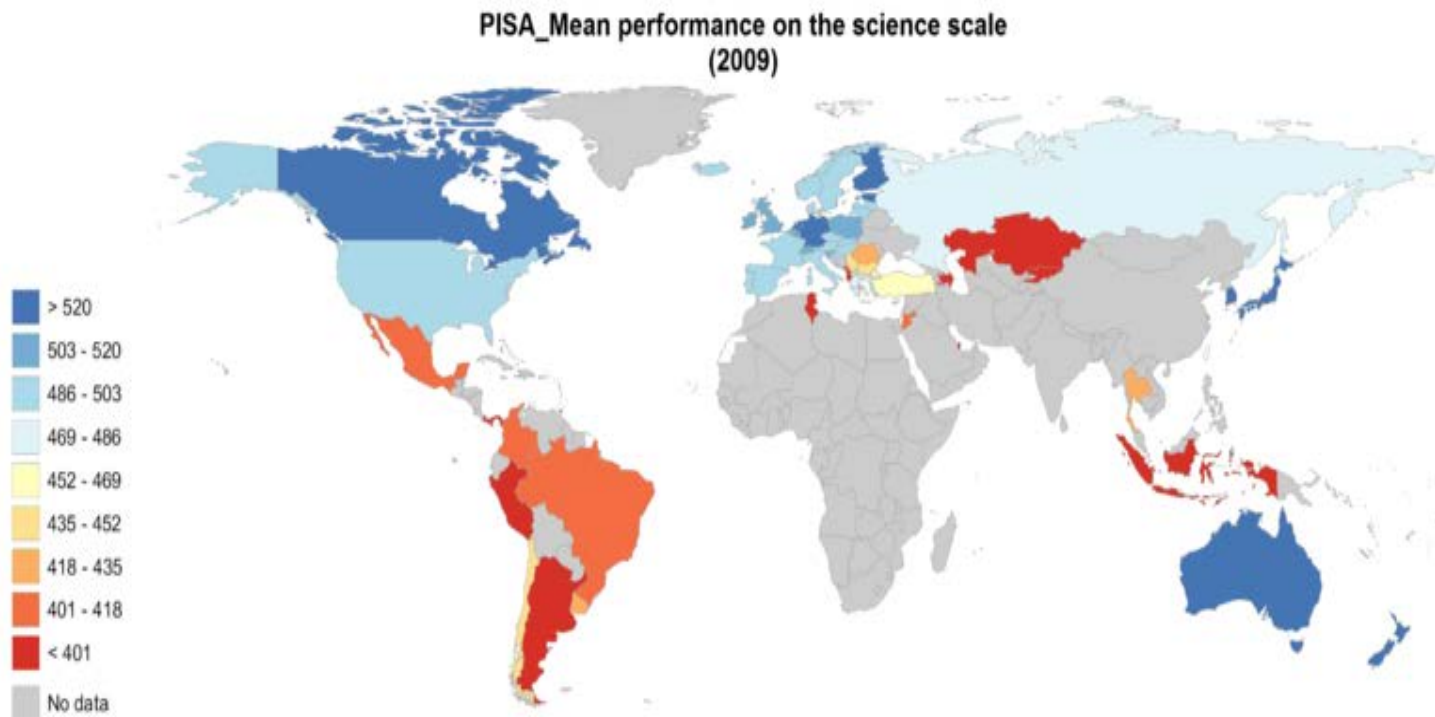
There is no other political field  
where politicians use it as a „playground“  
for their personal favorites



Will (better) education improve  
general quality features of a population ?  
(nation, state)



# Competence in science of 13-15 year old pupils



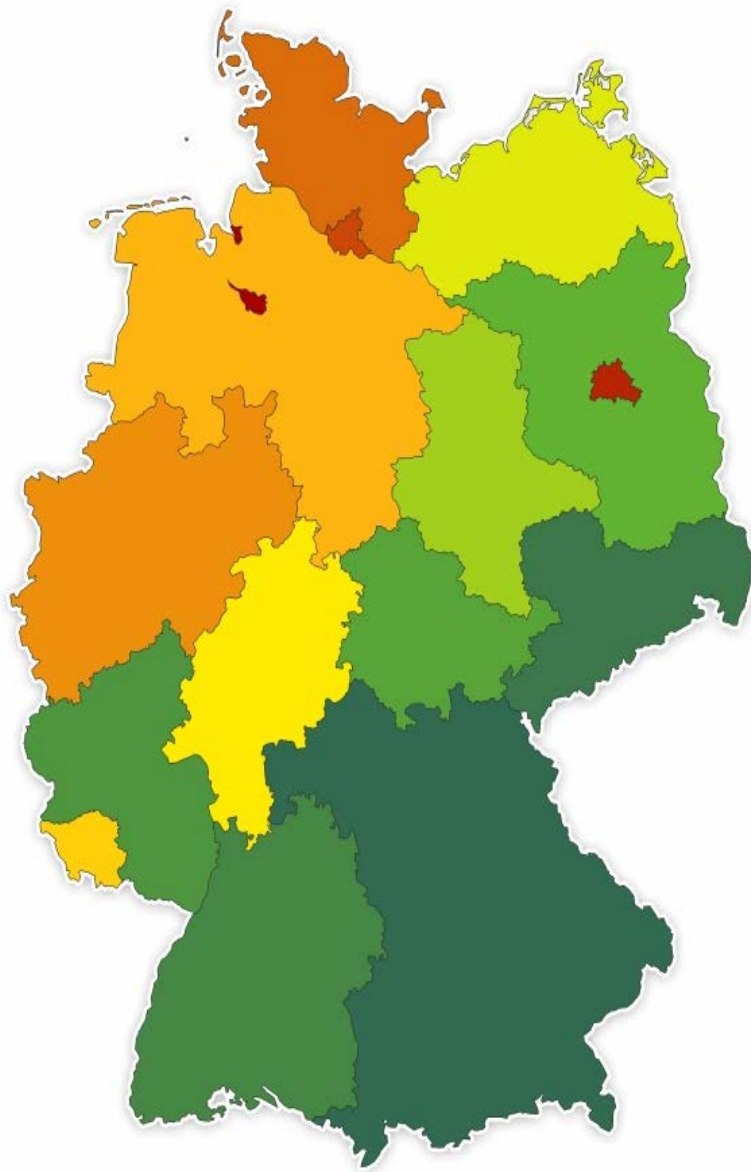




Summarized:

Yes, education can be regarded as a quality feature (of nations or parts of it) !





# Competence in science 2009

PISA study  
13 yr old pupils



# PIAAC

(Programme for the International Assessment of Adult Competences) / (financed by OECD).

international assessment for adults (16-65 years)  
N= 166000 people  
from 24 countries (USA, Russia, Australia, Canada, Korea, Japan and countries of the EU)

in 3 areas:

- + reading competence
- + mathematical competence
- + solving problems with modern communication systems

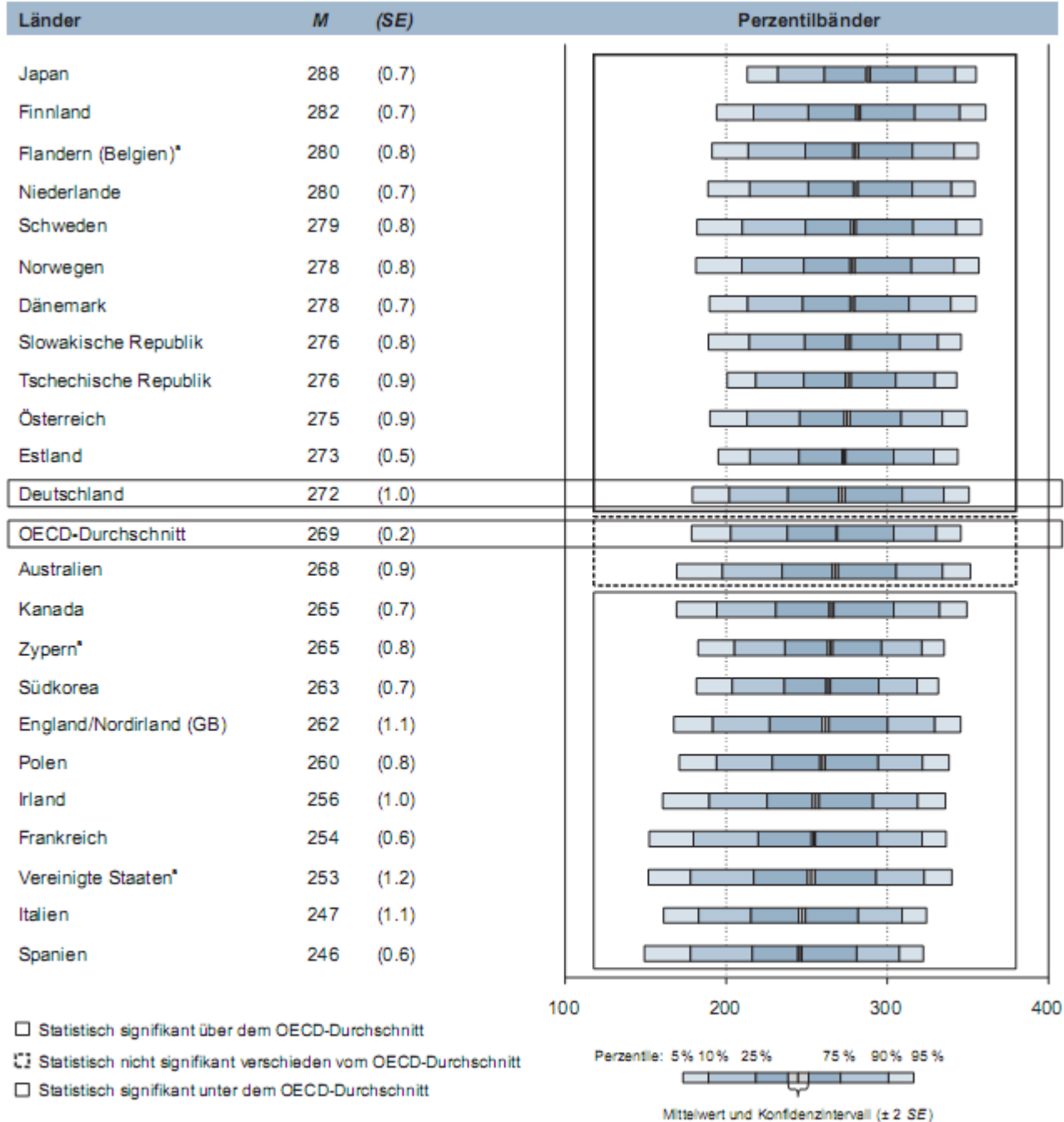
Beatrice Rammstedt (Hrsg.)

unter Mitwirkung von D. Ackermann, S. Helmschrott,  
A. Klaukien, D. Maehler, S. Martin, N. Massing, A. Zabal

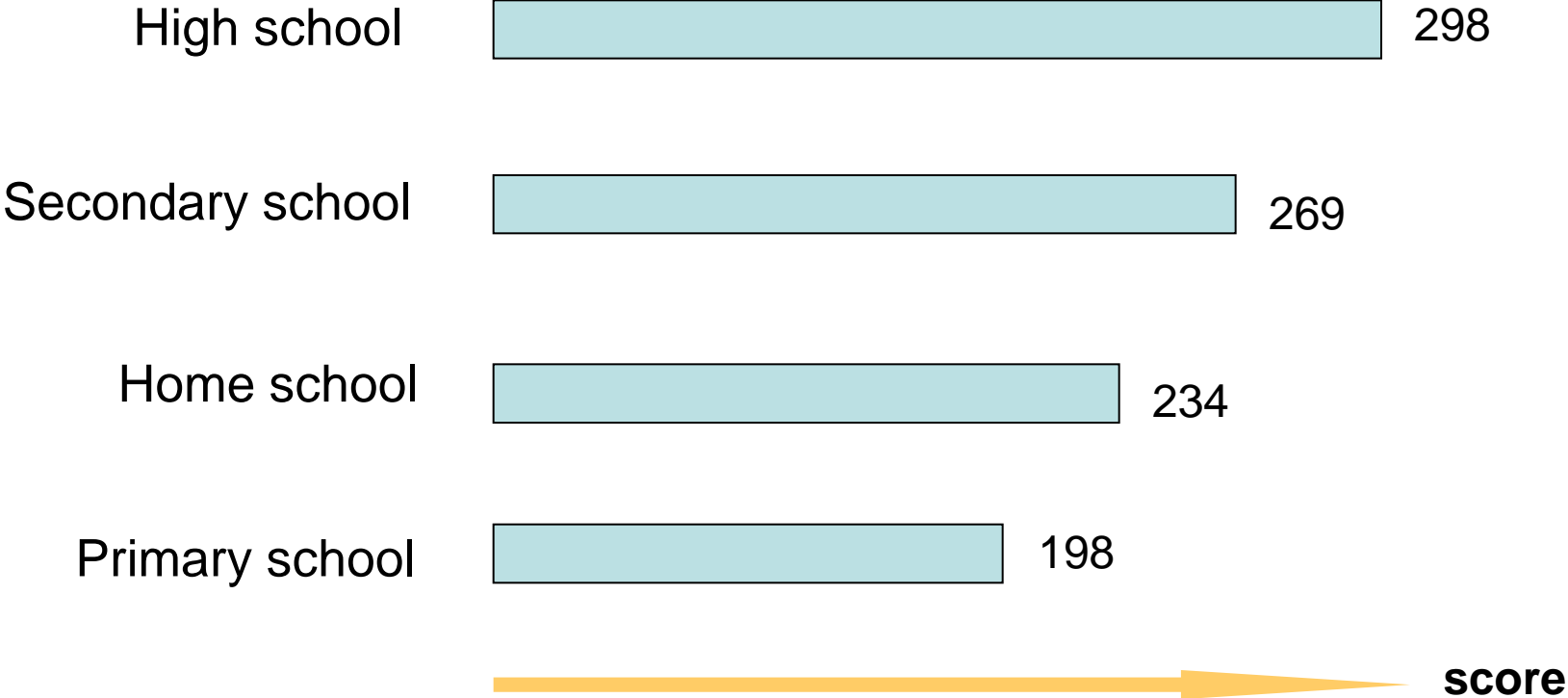
Grundlegende Kompetenzen  
Erwachsener im  
internationalen Vergleich

Ergebnisse von PIAAC 2012

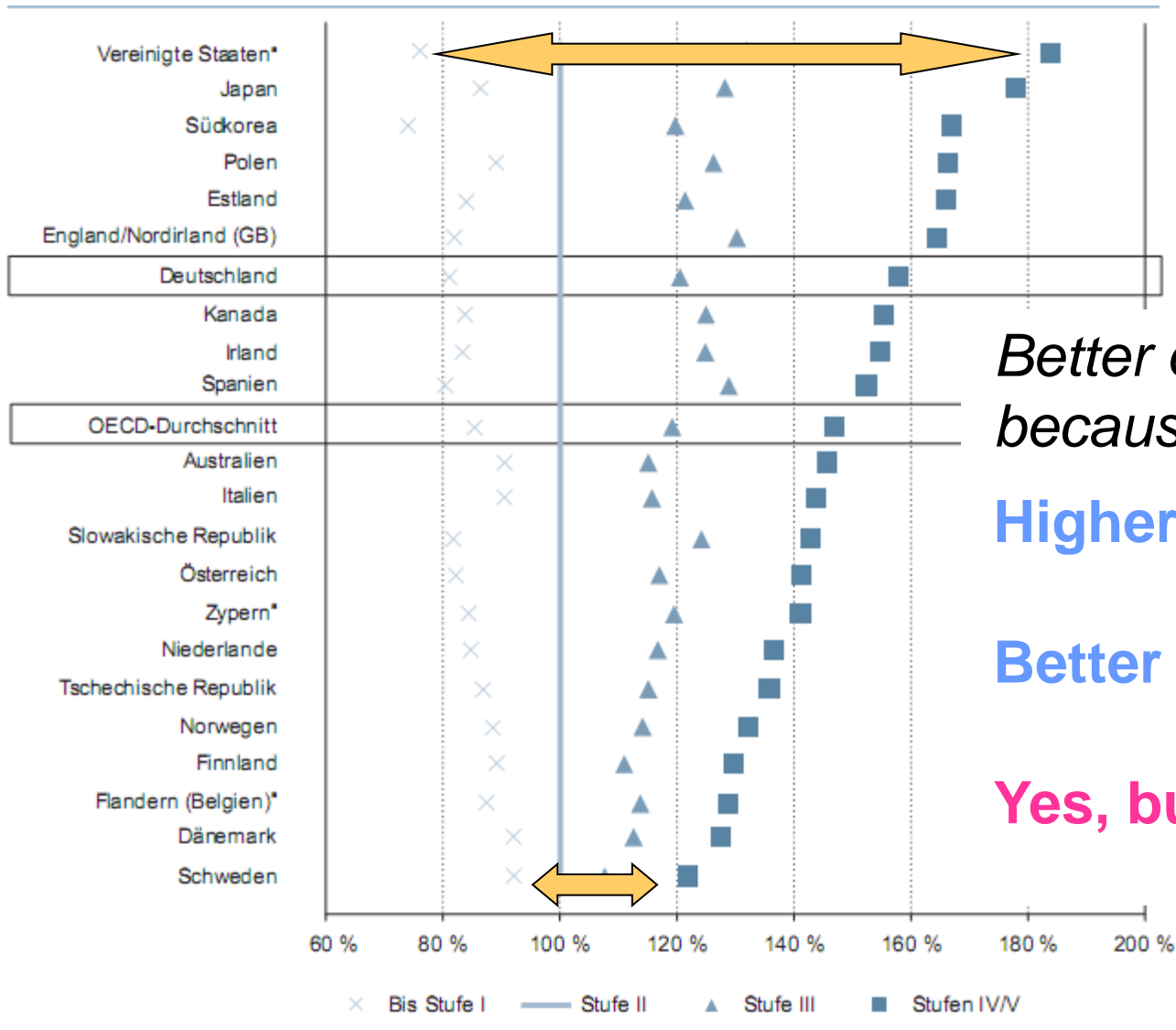
# Mathematical competence



# Reading competence depending on school graduation



# Relative income for 4 levels of mathematic competence



*Better education,  
because...*

**Higher income ?**

**Better economy ?**

**Yes, but it depends !**

General agreement:

Education is important

# Disagreement:

1. Which education contents are important ?
2. How should knowledge be imparted (form of communication)





meeting  
in 2012



**Content aspect**

***What should we teach ?***

**Do our students learn  
what they will need later?**

About expected learning outcomes  
and competences of graduates



meeting  
in 2013

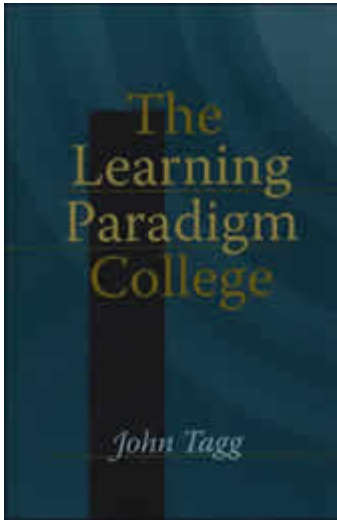
University  
of Istanbul

**Formal aspect**

**How should we teach ?**

**The shift from Teaching  
To Learning?**

About expected learning outcomes  
and competences of graduates



# From *Teaching to Learning* -.

A New *Paradigm* for  
Undergraduate Education

By Robert B. Barr and John Tagg.



John Tagg



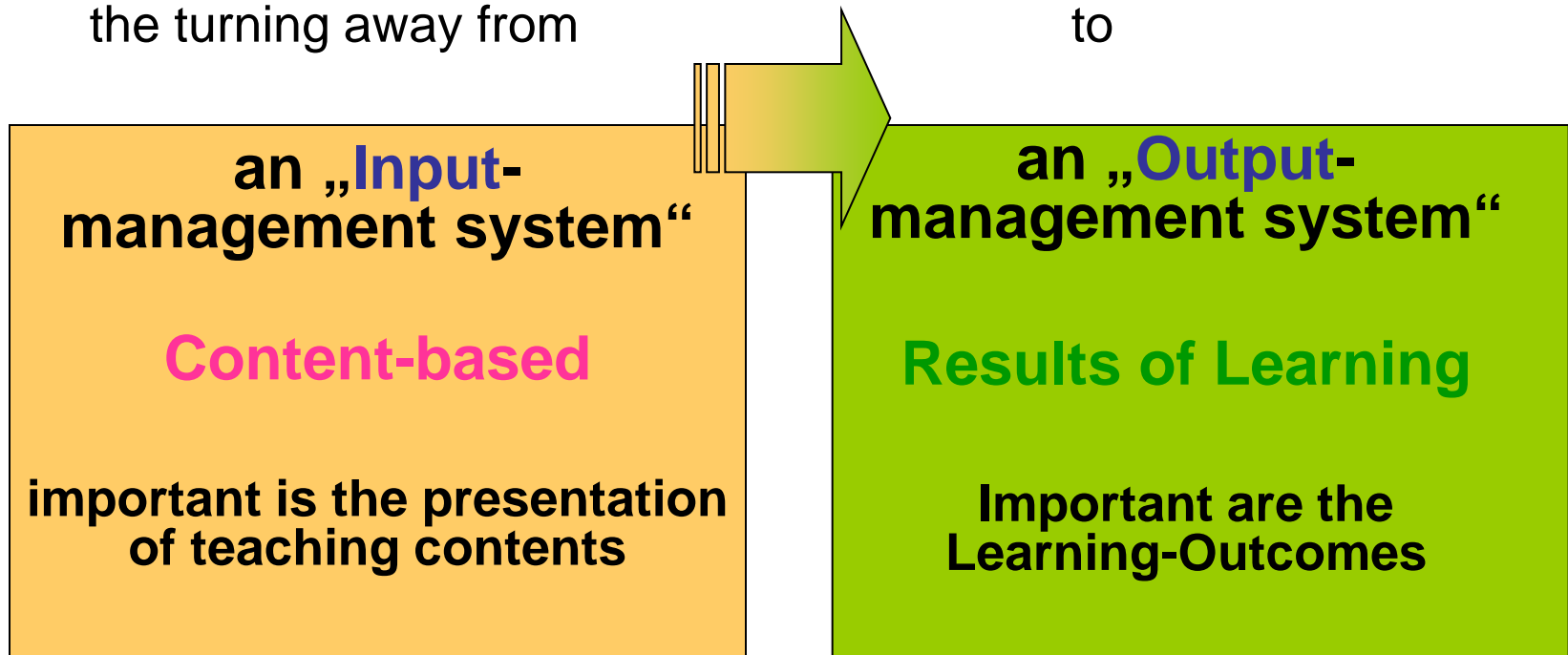
Bob Barr

According to a figure of speech of the **UNESCO** we observe at the education and higher education systems a „*Shift from Teaching to Learning*“

This change – also visible in other fields of the „New Public Management“ means

the turning away from

to



The shift from teaching to learning is visible at the workload orientation (students working hours)

- **Student centred approach** (the students and their learning processes are in the focus)
- **Change of the teachers position** (from a clear instruction to an arrangement of learning environments and learning advices)
- **Learning based on the results**
- **Promotion of self organized and active learning**
- **Notice of motivation and social aspects of learning**
- **Combination of knowledge aquisition and the acqisition of learning strategies**

## Competences (highly important)

- capacity for analysis and synthesis
- capacity to learn
- problem solving
- capacity to apply knowledge in practice
- capacity to adapt to new situations
- focus on concern for quality
- information management
- ability to work autonomous
- teamwork
- will to succeed
- basic knowledge !

# Soft Skills

Social  
competence

Professional  
competence

Decision making  
and responsibility

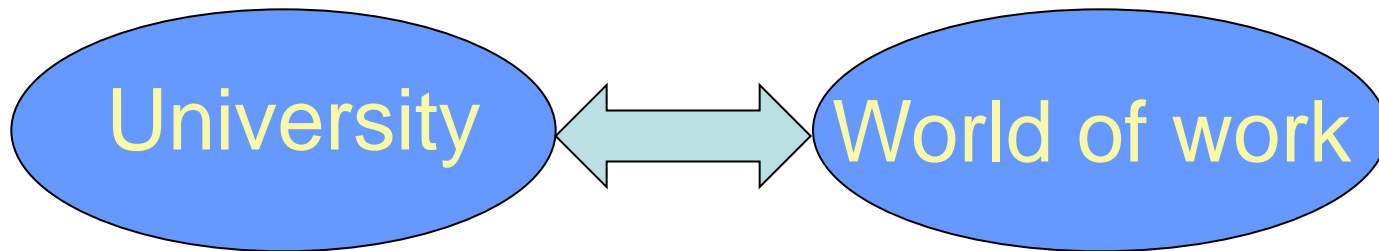
competence  
In methods

Self  
competence





# Learning outcomes



academic  
Quality

Employability

Citizenship

Increasing important indicators for the quality of  
academic education are

„Employability“,

(the generic competence to overcome the  
changing challenges within the occupation

and

„Citizenship“

(the competence to participate actively in the  
forming of the living social

How did we realize the shift from  
teaching to learning at the  
forest academic sector

?

# Indicators for the change

Formulation of the goal of the module  
(module and exam description)

EXAMPLE

**Before:**

In the course principles and techniques of modern silviculture are presented

**After:**

The student should be able to know principles of modern silviculture and to apply specific techniques

## B.Sc. Study program

1. Semester (Wintersemester, 31 Credits)					
6 C B.Forst.101 Grundlagen der Forstbotanik	6 C B.Agrar.xy2 Grundlagen der Betriebs- und Volkswirtschaftslehre	6 C B.Forst.103 Naturwissenschaftliche Grundlagen	7 C B.Forst.104 Grundlagen der Biometrie und Informatik	3 C B.Forst.105 Forstzoologie u. Waldschutz	3 C B.Forst.106 Wildbiologie u. Jagdkunde
2. Semester (Sommersemester, 29 Credits)					
6 C B.Forst.101 Grundlagen der Forstbotanik (Forts.)	6 C B.Forst.107 Ökopedologie	5 C B.Forst.108 Bioklimatologie	6 C B.Forst.109 Rechtliche Grundlagen	4 C B.Forst.105 Forstzoologie und Waldschutz (Forts.)	2 C B.Forst.110 Vorbereit. Berufspraktikum
3. Semester (Wintersemester, 30 Credits)					
7 C B.Forst.111 Waldbau	3 C B.Forst.107 Ökopedologie (Forts.)	5 C B.Forst.112 Forstliche Marktlehre	5 C B.Forst.113 Forstgenetik	12 C B.Forst.110 Berufspraktikum (8 Wochen + Nachbereitung) - insgesamt 14 C mit der Vorbereitung im 2. Semester -	
4. Semester (Sommersemester, 30 Credits)					
5 C B.Forst.114 Waldbau - Übungen	6 C B.Forst.115 Naturschutz u. raumbezogene Informationssysteme	6 C B.Forst.116 Technische Produktion im Forstbetrieb	6 C B.Forst.117 Forstliche Betriebswirtschaftslehre	7 C B.Forst.118 Methoden der Erfassung von Waldbeständen	
5. Semester (Wintersemester, 30 Credits)					
12 C B.Forst.201 (Wahlpflicht) Vertiefungspraktikum (Forschungsprakt. u. Literaturseminar)	6 C B.Forst.119 Waldwachstum und Forsteinrichtung	6 C B.Forst.119 Forstliche Biometrie	6 C B.Forst.30x Wahlmodul		
12 C Bachelorbachelor					
6. Semester (Sommersemester, 30 Credits)					
12 C Bachelorbachelor		5 C B.Forst.121 Holzbiologie, Holztechnologie und Holzkunde	5 C B.Forst.122 Politikfeldanalyse Forstwirtschaft	6 C B.Forst.30x Wahlmodul	
6 C B.Forst.202 (Wahlpflicht) Betriebsanalyse	6 C B.Forst.203 (Wahlpflicht) Anwendungsorient. Projekt			2 C B.Forst.123 Präsentation wiss. Arbeiten	

Wissenschaftliches Profil
Anwendungsorientiertes Profil
Berufspraktikum
Wahlmodul

Faculty of Forest Sciences  
and Forest Ecology  
GÖTTINGEN

**Traditional higher Forest education**  
(in comparison to other study programs)

many exercises (self experience)

many excursions (practical examples  
and different opinions)

projects (combination of different  
competences)

co-operation with people from practice

**Changes:**

more soft skills

more elective courses



less compulsory courses !

# Improvement of *employability*

Forest higher education is linked with the wishes (demands) of the traditional main employer (forest administrations)

...and the good circuit...

a critical remark

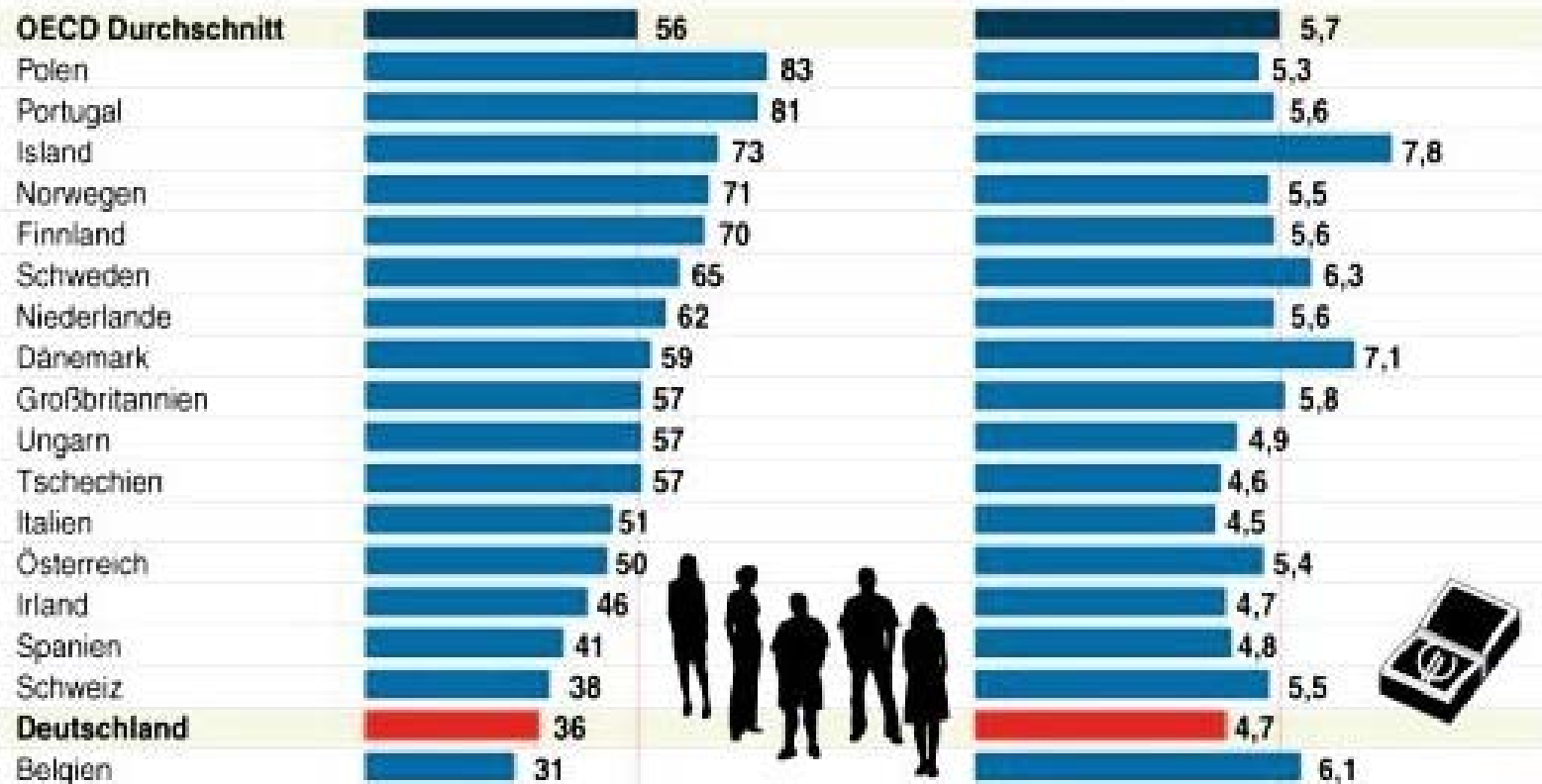
Education policy is striving for  
more and more well educated people



# OECD - Education Report

Share of study beginners at universities and universities of applied sciences 2008 as percent of the respective vintage

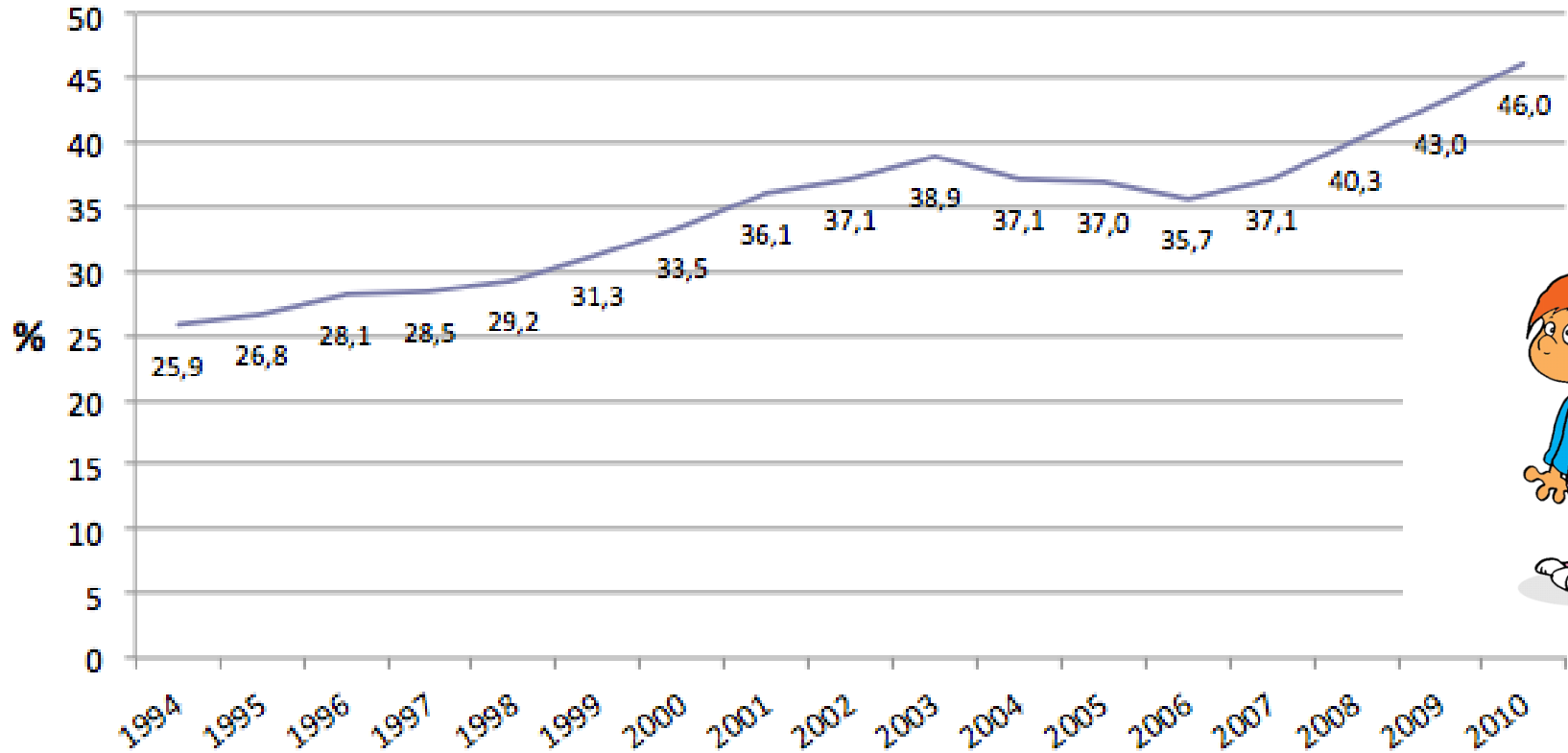
Spending on education in percent of the respective gross domestic product (GDP)



Quelle: OECD, ausgewählte Länder

AFP

# Study beginner quote (Germany)



4175N9

DEUTSCHE BUNDESBANK

*Sonderbanknote*

10



1777 - 1855 Carl Friedr. Gauß

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GD9674175N9

Bank für Sozialisten





Uni-  
versity

Apprentice-  
ship



Secondary  
school

Apprentice-  
ship

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Primary school

## Summarized...

Education in general is an important political goal,  
But there is a disagreement about contents and form.

For about 20 years there is a shift from teaching to learning  
(Bologna principles) at most universities

Forest higher education has a long tradition with a  
strong connection to the forest administration.  
There are clear demands of professional knowledge

.  
Therefore the forest study is not very well suited to  
realize the principal shift from teaching to learning

Finally: Education is not only possible at universities!



*Thank you for your interest!*

