# Competence for the Unknown Future

October 5, 2016

ASEM Conference, Copenhagen, Denmark

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Wageningen University

The Netherlands

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# Wide range of learning theories

- Activity theory
- Agency theory
- Alignment and transition theory
- Argumentation-based learning
- Authentic learning theory
- Blended learning theory
- Cognitive apprenticeship theory
- Cognitive load theory
- Communities of practice theory
- **Competence theory**
- Concept-context theory
- Educational effectiveness theory
- Expansion learning theory
- Experiential learning theory
- Flexibility-mobility theory
- Identity development theory
- Learning domain theory
- Personal epistemology theory
- Professional development theory
- Qualification theory
- Self-regulation theory
- Situated cognition theory
- Social learning theory
- Test theory
- Transfer theory
- Workplace learning theory

# Diversity in competence theories

# Competence is more popular than ever

# CBE more popular than ever

What is competency-based education?

https://www.youtube.com/watch?v=RckLD9A0pqc

Obama Mentions SNHU and Competency Based Education

https://www.youtube.com/watch?v=WjNYElRzRtI

https://www.youtube.com/watch?v=X_EbseBknZA

https://www.youtube.com/watch?v=L3H-och9Hfc

# China, 2015

THE WORLD BANK
IBRD • IDA
Working for a World Free of Poverty

English
Search

ABOUT DATA RESEARCH LEARNING NEWS PROJECTS & OPERATIONS PUBLICATIONS COUNTRIES TOPICS

Projects & Operations

## China: Improving Technical and Vocational Education to Meet the Demand for High-Skilled Workers

September 14, 2015

At technical/vocational schools in China, curriculums and training methods are outdated and barely keep pace with market needs. A project helps bring changes.

**9,000**

The project has benefited more than 9,000 students, as well as school teachers and administrators.

China

East Asia and Pacific

Education

**RELATED PROJECT**

Guangdong Technical and Vocational Education and Training Project

http://www.worldbank.org/en/results/2015/09/14/china-improving-technical-and-vocational-education-to-meet-the-demand-for-high-skilled-workers

NATIONAL CURRICULUM WORKSHOP
ON
OMPETENCE BASED MSc PROGRAM IN HORTICULTURE
JUCAVM
JULY 26, 2008

# Nigeria

FEDERAL REPUBLIC OF NIGERIA
FEDERAL MINISTRY OF LABOUR AND PRODUCTIVITY
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SKILL UPGRADING AND VOCATIONAL TRAINING CENTRE
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TEL: 08023020301, 08182025545, 08140396889
E-MAIL: info@aatalearning.com, aatalearning@gmail.com

# Rwanda, 2015

REB
Rwanda Education Board

## Competence Based Curriculum

*Curriculum for sustainable development*

Home | Download Syllabus | Sciences | Humanities | Languages

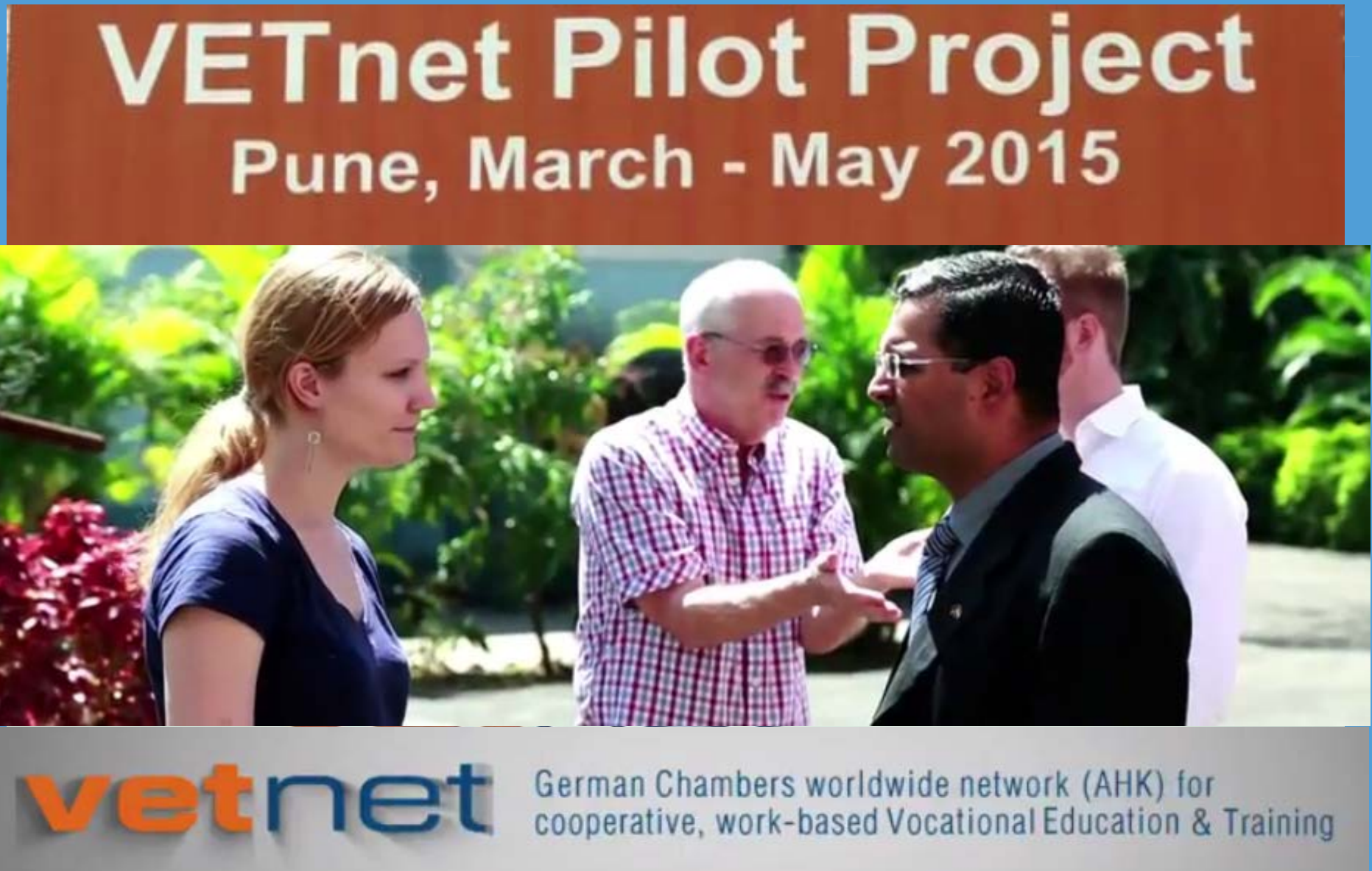
### Competence based Curriculum

The Ministry of Education of Rwanda through Rwanda Education Board is honoured to provide all beneficiaries with the new competence based curriculum. It serves as an official document and guide to competency based teaching and learning, and also ensures that there is consistency and coherence in the delivery of education across all levels of general education in Rwandan schools.

### Syllabuses

- Inyoborabarezi ku Nteganyanyigisho y'Uburezi bw'Inshuke
- Inyandiko ivuguruye ikubiyemo amabwiriza ajyanye n'ishyirwamubikorwa integanyanyigisho
- Pre-Primary
- Lower-Primary
- Upper-Primary
- Lower-Secondary
- Upper-Secondary
- List of Subjects and A Level Combinations
- Curriculum Framework
- Summary of Curriculum Framework

# German Chambers of Commerce project in India



# Bangladesh, 2012

## Implementing Competency-Based Training (CBT) in Bangladesh

FACT SHEET

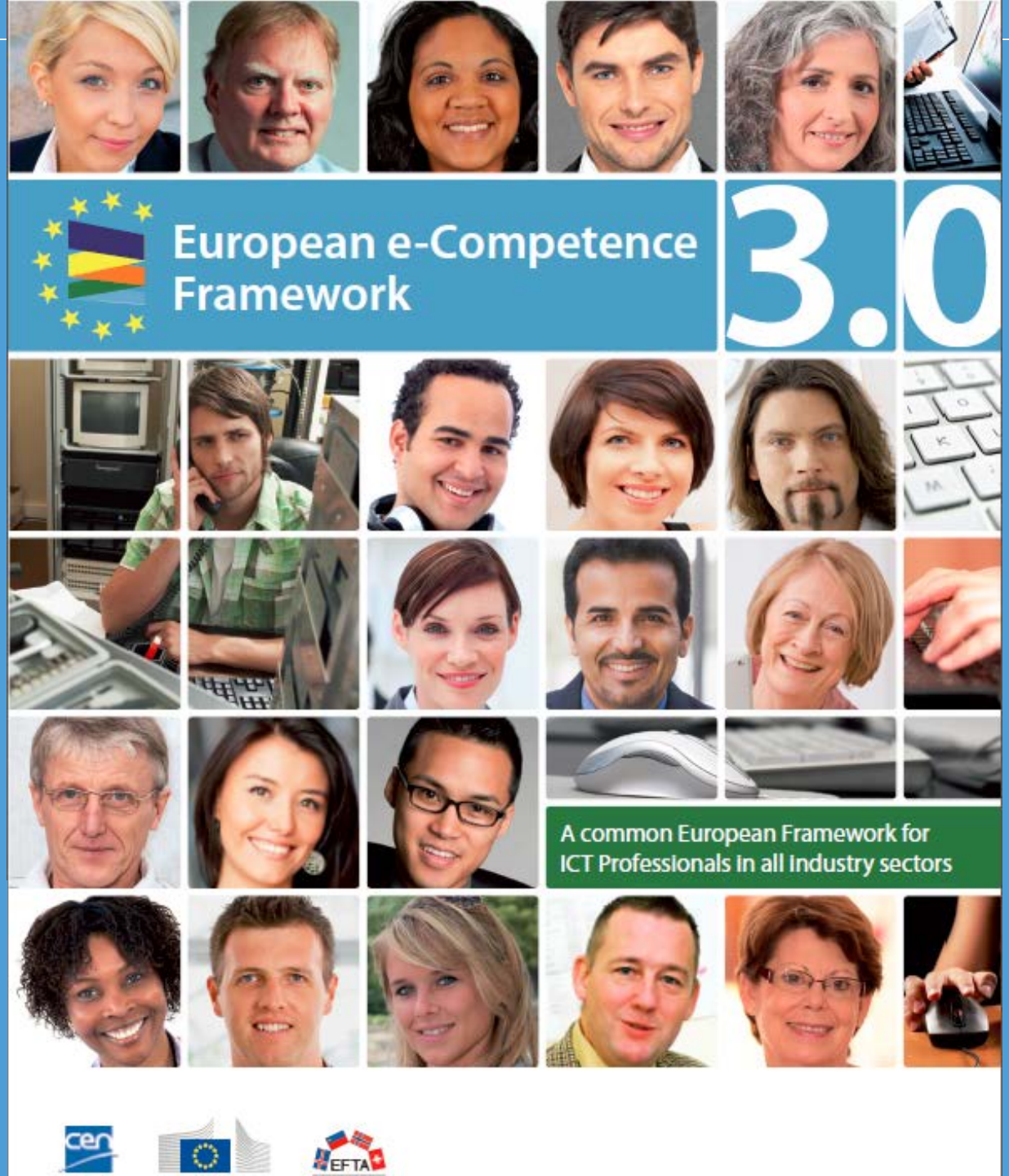
International Labour Organization

## CONCEPT DESCRIPTION

# Mexico, 2015

OBSERVATORY
of Educational Innovation
Tecnológico de Monterrey
Tecnológico de Monterrey
Report
EduTrends
FEB 2015
Competency Based
Education

2014


European e-Competence Framework
3.0
A common European Framework for ICT Professionals in all industry sectors
cen
EFTA

# Bartram – The great eight Competency Framework (2005)

- Leading and Deciding
- Supporting and Co-operating
- Interacting and Presenting
- Analysing and Interpreting
- Creating and Conceptualising
- Organising and Executing
- Adapting and Coping
- Enterprising and Performing

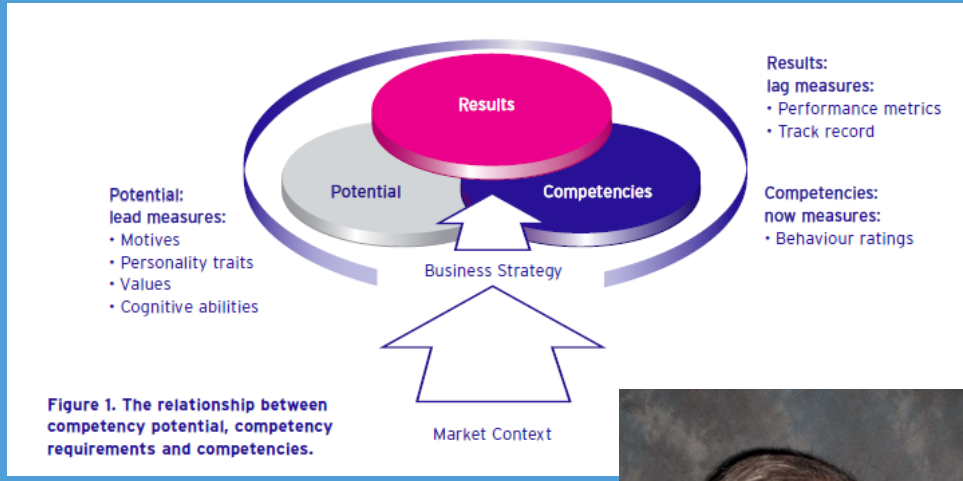
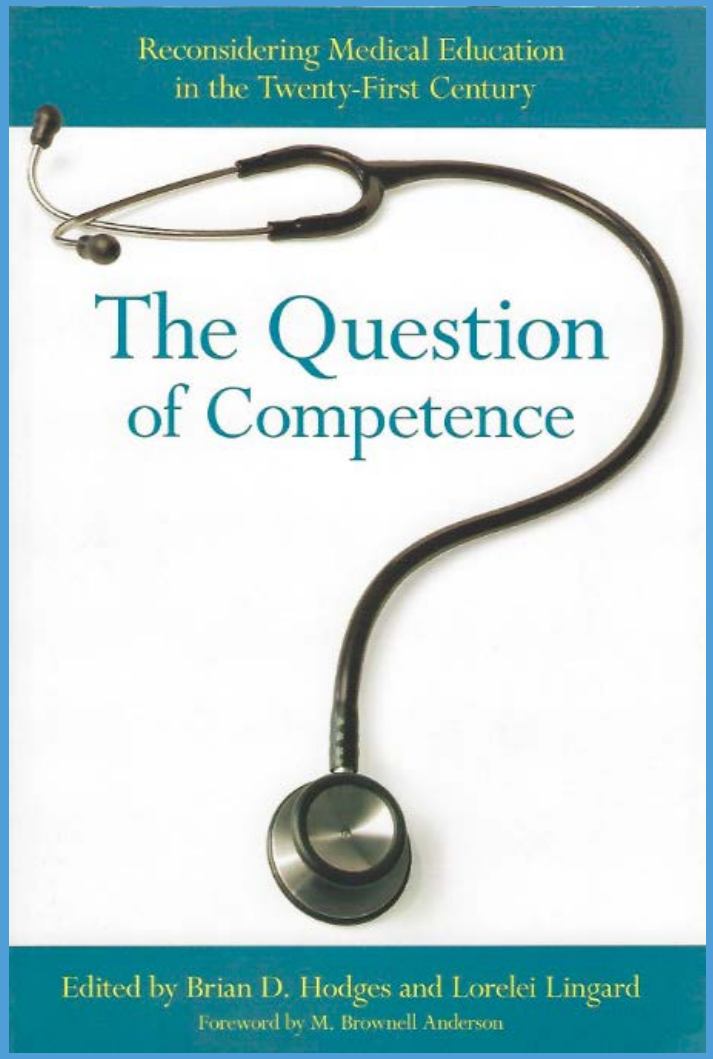
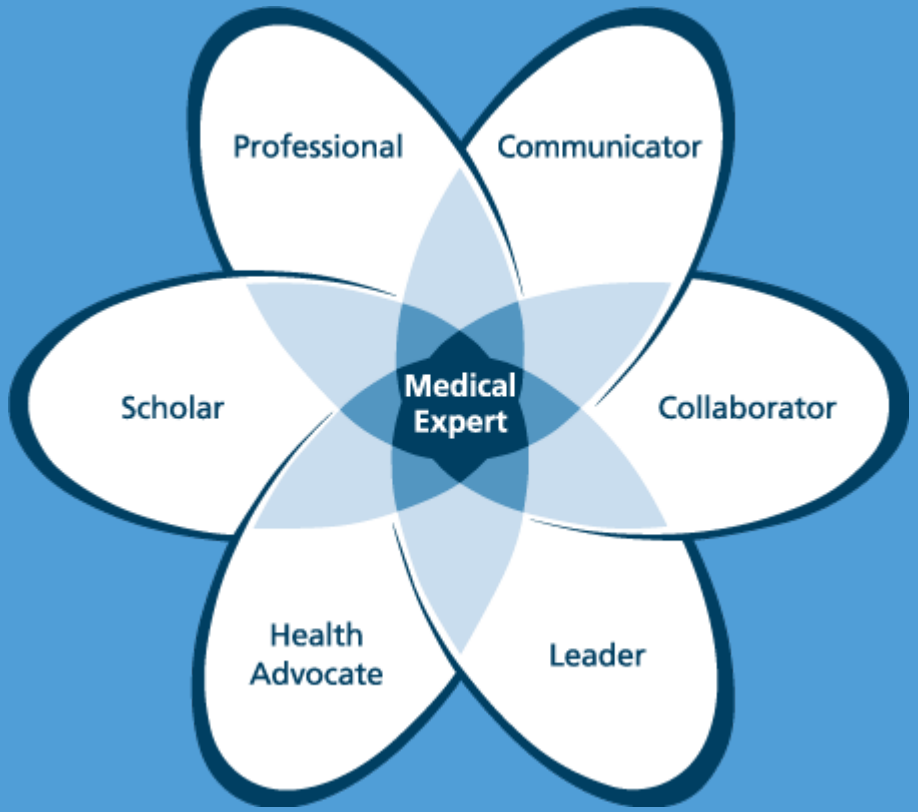


Figure 1. The relationship between competency potential, competency requirements and competencies.

Source: http://www.shl.com/OurScience/Documents/SHLUniversalCompetencyFramework.pdf

# Competence in Medicine - Cornell Press, 2012
# CanMeds Competency Framework, 2015




http://canmeds.royalcollege.ca/en/framework

# Domain-specific competence frameworks

- Purchasing - Mulder et al (2005)
- Agricultural extension - Karbasioun et al (2007)
- HIV/AIDS in agricultural advisory work - Brinkman et al (2007)
- Entrepreneurship - Mulder et al (2007), Lans (2009), Lans et al (2008; 2010; 2011)
- Horticulture - Van der Heide et al (2008); Mulder et al (2011; 2013)
- Interdisciplinarity in higher education - Spelt et al (2009)
- Open innovation - Du Chatenier (2009) and Du Chatenier et al (2009, 2010)
- Sustainable development - Wesselink and Wals (2011)
- Argumentation competence - Noroozi (2013)
- Multicultural cooperation - Popov et al (2013)
- Competence of beginning elementary school teachers - Alake-Tuenter (2014)
- Competence development in practical training – Khaled (2014)

# Growing evidence for effects of CBT

JSLS Journal of the Society of Laparoendoscopic Surgeons

JSLS. 2015 Apr-Jun; 19(2): e2014.00136.
doi: 10.4293/JSLS.2014.00136

PMCID: PMC4396055

## Application of Competency-Based Education in Laparoscopic Training

Dongbo Xue, MD, Hong Bo, MD, Weihui Zhang, MD,✉ Song Zhao, MD, Xianzhi Meng, MD, and Donghua Zhang, MD✉

Author information ▶ Copyright and License information ▶

### Abstract

Go to:

#### Background and Objectives:

To induce competency-based education/developing a curriculum in the training of postgraduate students in laparoscopic surgery.

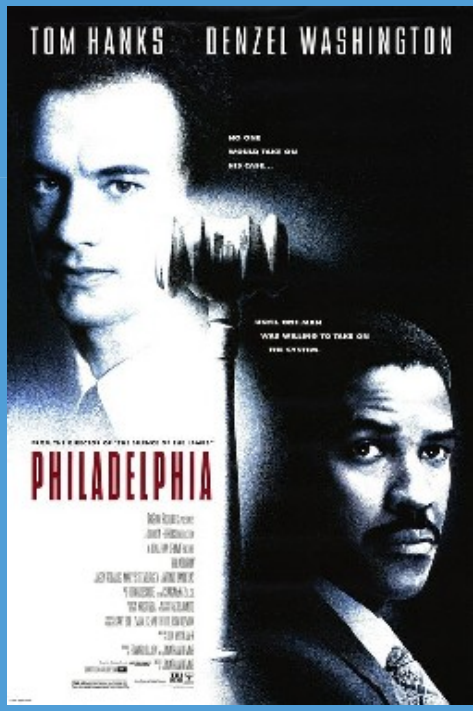
Nevertheless ... the competence concept is often used in a negative way.

# Janis Joplin: 1943 – 1970

Band: Big Brother and the Holding Company

James Konrad (a music critic in the 1960s): It's a shame about Big Brother and the Holding Company, it really is. Their lead singer, Janis Joplin, is the most important female vocalist since Aretha Franklin, but the musicians in the band are only slightly better than competent, and can't begin to come up to her level.

# “Philadelphia” (1993) - Beckett against (Bob) Wheeler




- WHEELER (Employer) Andrew (Beckett) brought AIDS into our offices, into our men's room. He brought AIDS to our annual goddamn family picnic ...
- SEIDMAN (Co-worker) A jury might decide that Andy has a case.
- WHEELER Wait a minute. The man was fired for incompetence, not because he has AIDS. You didn't know he was sick, did you, Bob?
- KENTON (Co-worker) Holy Shit. Did you, Bob?
- BELINDA CONINE (Attorney) Your Honor, Mr. Beckett's incompetence nearly sabotaged a 350 million dollar suit.

# The new Q in Skyfall – James Bond (2012)

Q: 007. I'm your new Quartermaster.

Bond: You must be joking.

Q: Why, because I'm not wearing a lab coat?

Bond: Because you still have spots.

Q: My complexion is hardly relevant.

Bond: Your competence is.

Q: Age is no guarantee of efficiency.

Bond: And youth is no guarantee of innovation.

Q: I'll hazard I can do more damage on my laptop sitting in my pajamas before my first cup of Earl Grey than you can do in a year in the field.

# Where does the competence concept come from?

# Competence is used a lot in daily language...

- An aircraft type license
- An approved medical officer
- An accredited laboratory
- A competent authority
- A licensed teacher
- A qualified person

# Old roots of the word competence

- Sanskrit: समर्थ (samartha)
- Chinese: 作证能力 (zuòzhèngnénglì)
- Greek: ικανότης - (Ikanotis) the quality of being ikanos (capable), to have the ability to achieve something; skill (Plato, Lysis 215A; 380 BCE)
- Latin - competens; competentia
- English – competence; competent
- French – compétence compétent
- Dutch: 1504 CE – competentie - competent

# Competence … old wine in new bottles?

Code of Hammurabi, King of Babylon, 1792-1750 BCE

‘… Hammurabi, le roi compétent … ‘

**Épilogue**

*« Telles sont les décisions de justice que Hammurabi, le roi compétent, a établies pour engager le pays conformément à la vérité et à l'ordre équitable [...] Que l'homme injustement traité, qui est impliqué dans une affaire, vienne devant l'image de moi-même, le roi de justice, et se fasse lire ma stèle écrite, qu'il entende ainsi mes précieuses ordonnances ; que ma stèle lui indique son affaire, qu'il voit son cas, que son cœur s'allège [...] Je suis Hammurabi, le roi de justice, à qui Shamash a octroyé la vérité. »*

# Institutional Use of Competence

- Rychen & Salganik, 2003 (OECD)
  - DeSoCo-project
- European Commisson, 2005
- European Parliament and Council, 2006
- European Social Partners, 2006
- EQF - NQFs
- 2012 EU Assessment of Key Competences
- CEN (2014). European e-Competence framework 3.0
- 2015 Riga Conclusions - Key Competence as policy option

DESCRIPTORS DEFINING LEVELS IN THE EUROPEAN QUALIFICATIONS FRAMEWORK (EQF)

| Each of the 8 levels is defined by a set of descriptors indicating the learning outcomes relevant to qualifications at that level in any system of qualifications. | KNOWLEDGE<br>In the context of EQF, knowledge is described as theoretical and/or factual. | SKILLS<br>In the context of EQF, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) and practical (involving manual dexterity and the use of methods, materials, tools and instruments). | COMPETENCE<br>In the context of EQF, competence is described in terms of responsibility and autonomy. |
|---|---|---|---|
| LEVEL 1 — The learning outcomes relevant to Level 1 are | basic general knowledge | basic skills required to carry out simple tasks | work or study under direct supervision in a structured context |
| LEVEL 2 — The learning outcomes relevant to Level 2 are | basic factual knowledge of a field of work or study | 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 | work or study under supervision with some autonomy |
| LEVEL 3 — The learning outcomes relevant to Level 3 are | knowledge of facts, principles, processes and general concepts, in a field of work or study | a range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information | take responsibility for completion of tasks in work or study<br>adapt own behaviour to circumstances in solving problems |
| LEVEL 4 — The learning outcomes relevant to Level 4 are | factual and theoretical knowledge in broad contexts within a field of work or study | a range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study | exercise self-management within the guidelines of work or study contexts that are usually predictable, but are subject to change<br>supervise the routine work of others, taking some responsibility for the evaluation and improvement of work or study activities |
| LEVEL 5* — The learning outcomes relevant to Level 5 are | comprehensive, specialised, factual and theoretical knowledge within a field of work or study and an awareness of the boundaries of that knowledge | a comprehensive range of cognitive and practical skills required to develop creative solutions to abstract problems | exercise management and supervision in contexts of work or study activities where there is unpredictable change<br>review and develop performance of self and others |
| LEVEL 6** — The learning outcomes relevant to Level 6 are | advanced knowledge of a field of work or study, involving a critical understanding of theories and principles | advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study | manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts<br>take responsibility for managing professional development of individuals and groups |
| LEVEL 7*** — The learning outcomes relevant to Level 7 are | highly specialised knowledge, some of which is at the forefront of knowledge in a field of work or study, as the basis for original thinking and/or research<br>critical awareness of knowledge issues in a field and at the interface between different fields | specialised problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures and to integrate knowledge from different fields | manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches<br>take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams |
| LEVEL 8**** — The learning outcomes relevant to Level 8 are | knowledge at the most advanced frontier of a field of work or study and at the interface between fields | the most advanced and specialised skills and techniques, including synthesis and evaluation, required to solve critical problems in research and/or innovation and to extend and redefine existing knowledge or professional practice | 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 |

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# In educational reports - Alfred True, 1929

UNITED STATES DEPARTMENT OF AGRICULTURE
MISCELLANEOUS PUBLICATION No. 36

WASHINGTON, D. C. ISSUED JULY, 1929

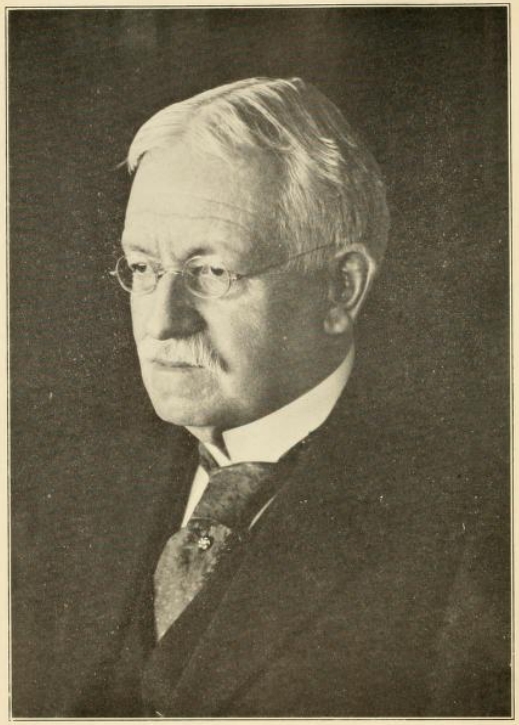
## A HISTORY OF AGRICULTURAL EDUCATION IN THE UNITED STATES

1785–1925

BY

ALFRED CHARLES TRUE
Specialist in States Relations Work, United States Department of Agriculture

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1929



ALFRED CHARLES TRUE
1853-1929

After more than 40 years of distinguished service in the United States Department of Agriculture, Doctor True died in Washington, D. C., on April 23. As director of the Office of Experiment Stations, in the period 1893–1915, and as director of the States Relations Service, in the period 1915–1923, Doctor True made notable contributions to the development of agricultural education and research in the United States. During the period from 1923 to the time of his death Doctor True devoted much of his time to the preparation of histories of agricultural education, agricultural extension work, and agricultural research.

# In educational books - John Dewey, 1916

- The democratic ideal
- Everybody should develop competence
- To choose and pursue a career

Dewey, J. (1916). *Democracy and education. An introduction to the philosophy of education*. New York: Macmillan.

# Competence as academic construct

# The ‘first’ - Robert Winthrop White, 1959

- An alternative for motivation psychology of Freud (unconscious sexual drives) and Hull (drive reduction)
- Children and adults are motivated to become competent in what they do
- Competence = the ability to interact effectively with the environment

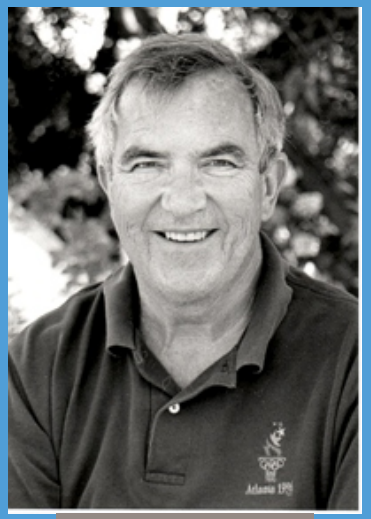
White, R.W. (1959). Motivation reconsidered: The concept of competence. *Psychological Review, 66,* 5, pp. 297-333.

# The ‘new’ first publications on competence

- Domas and Tiedeman (1950). Teacher competence: An annotated bibliography. *J. exp. Educ, 19,* pp. 101-218.
- Barr (1950). Teaching competencies. In: W.S. Monroe (Ed.), Encyclopedia of Educational Research. New York: McMillan.
- Morsh & Wilder (1954). *Identifying the Effective Instructor: A Review of the Quantitative Studies. 1900-1952.* Chanute AFB: Air Force Personnel and Training Research Center. Various studies mentioned in which the competence concept featured.

# PBTE – CBTE movement 1968 ff.

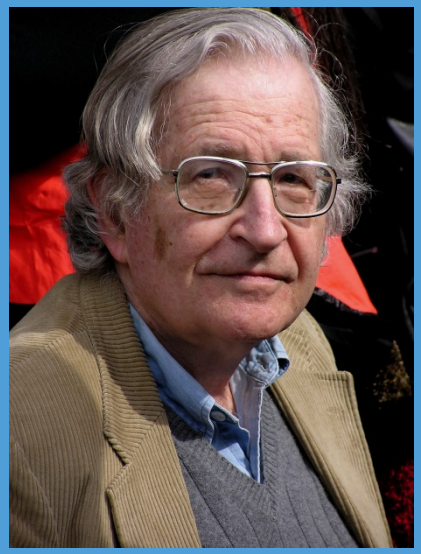
- Schalock and Hale 1968: competency-based teacher education, based on ideas about
  - performance-based teacher education
  - behaviour modification
  - direct behaviour training
  - individualized instruction
  - microteaching
  - modularization and mastery-learning
- Joyce (1971) critically reviewed CBTE
- Schmieder (1973) reviewed CBTE



Bruce R. Joyce

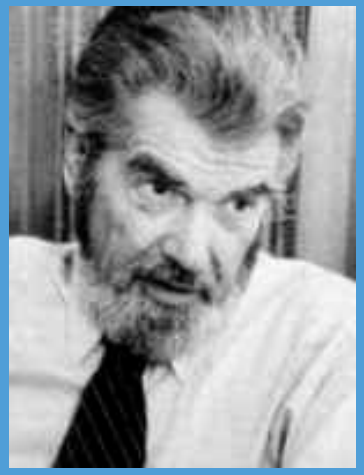
# Noam Chomsky, 1965

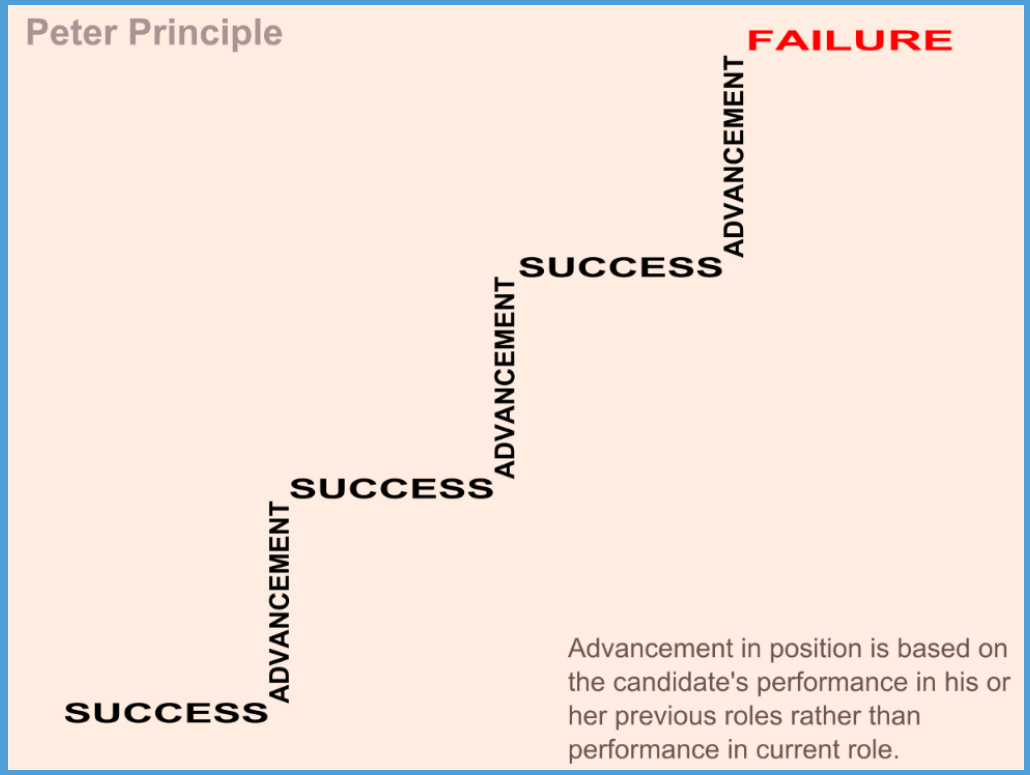
- Competence is a the underlying linguistic ability to create and understand sentences, including sentences never heard before
- Performance is the linguistic output
- Knowing rules does not automatically guarantee being able to speak correctly



Chomsky, N. (1965). *Aspects of the Theory of Syntax.* Cambridge: MIT Press

# Lawrence J. Peter, 1969

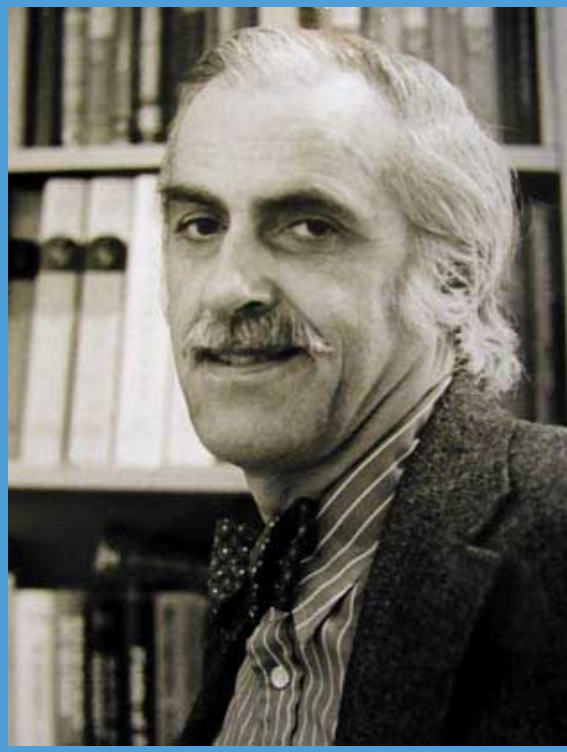





Peter, L. J. & Hull, R. (1969). *The Peter Principle: Why Things Always Go Wrong.* New York: William Morrow and Company.

# David C. McClelland, 1973

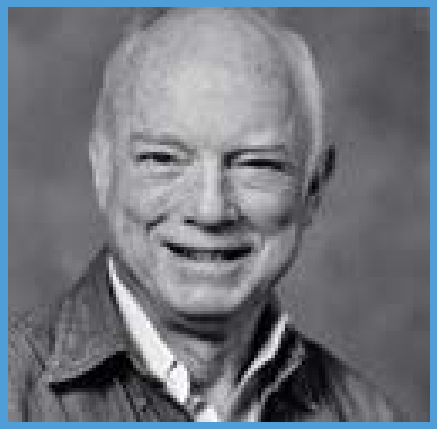
- Limited prognostic validity of intelligence tests and school grades
- Testing what people actually can do shows a better result
- Competencies should try to measure clusters of life outcomes
- Competencies should be identified by what superior performers do



McClelland, D.C. (1973). Testing for competence rather than for intelligence. *American Psychologist*, 28, 1-14

# Further theory and research

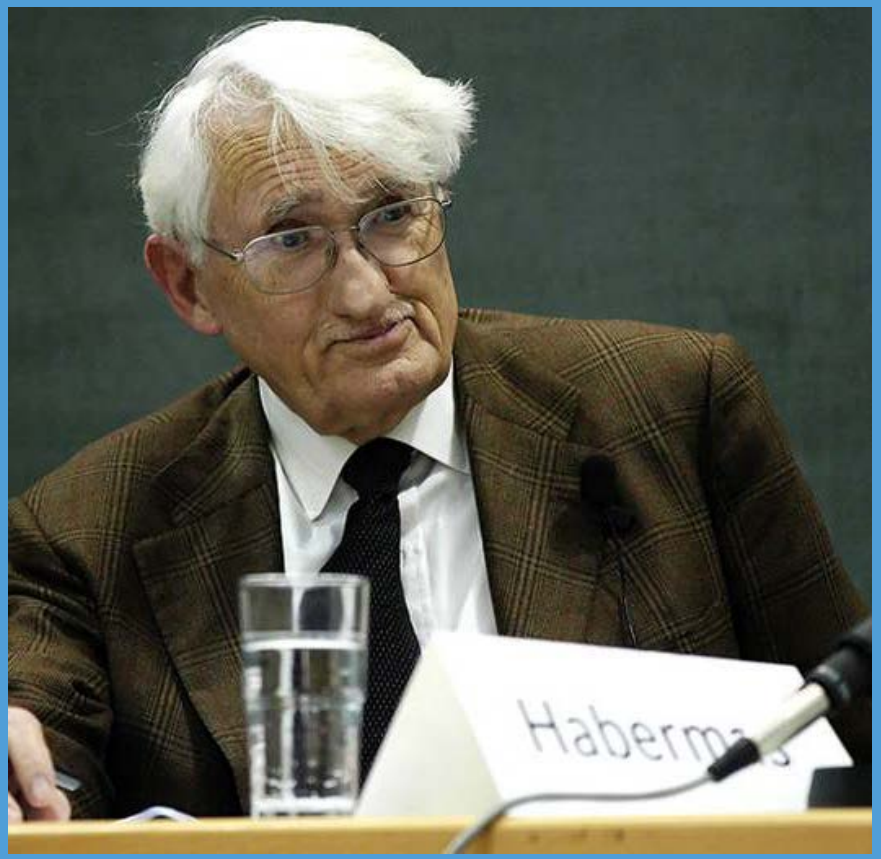
- Competence - Engineering worthy performance – Tom Gilbert (1978)



- The competent manager – Richard Boyatzis (1982)

# Competence framework Habermas (1984)

- Cognitive competence
- Linguistic competence
- Interactive competence

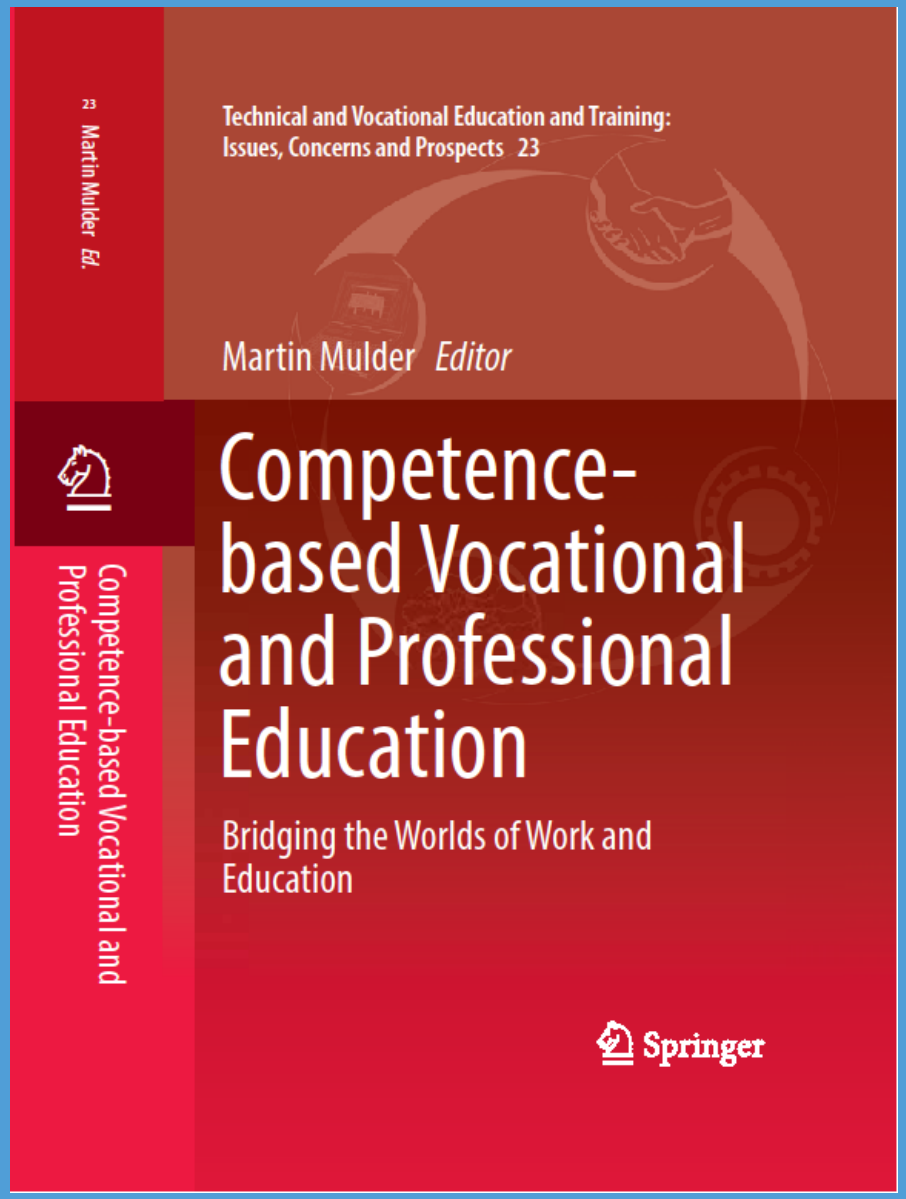


# Towards an overview and structure of the field of competence

# There have been many reviews/critiques

- Domas and Tiedeman, 1950
- Houston, 1974
- Grant et al, 1979
- Ellström, 1997
- Lum, 1999
- Rothwell and Lindholm, 1999
- Argüelles & Gonczi, 2000
- Westera, 2001
- Jones and Voorhees, 2002
- Hager, 2004
- Hyland, 2006
- Mulder, Weigel and Collins, 2007
- Smith, 2010
- Winterton, 2011
- Mulder, 2014

# Comprehensive Review of CbV&PE, 2017




- 50 chapters
- ≥ 85 authors
- Covering all continents
- Theories
- Policy developments
- CBE systems features
- Competence domains
- Synthesis

# Two Meanings of Competence

- Capability to perform
  - Proficiency, mastery, ability
- Right to perform
  - Legal authority, licensure, certification
  - institutional, organizational, cultural or regulated power, approval or assignment to act, decide, (dis)approve or regulate

http://cdn.uberreview.com/wp-content/uploads/600x365-davinci1.jpg
http://i.telegraph.co.uk/multimedia/archive/00648/news-graphics-2007-_648891a.jpg

# Three groups of competence theories

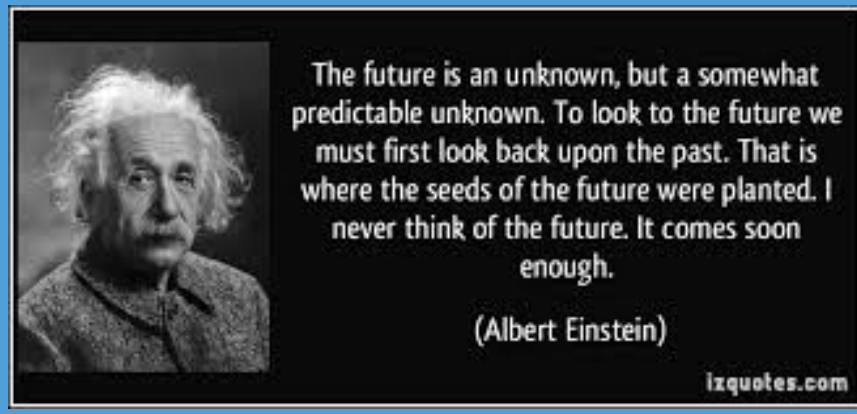
| | Context | Pitfalls |
|---|---|---|
| 1. Functional behaviourism | Training | Over-specification |
| 2. Integrated occupationalism | Education | Performatism |
| 3. Situated professionalism | Development | Over-generalisation |

# Three types of competencies

1.0 – for specific activities

2.0 – for known jobs

3.0 – for the unknown future



# Competence 3.0
# for the Unknown Future

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# Flowers

D. van Ooijen
D. van Ooijen
Deco Tulips BV
Deco Tulips BV
Deco Tulips BV
Tu en Banja Luka
Tu en Golden Apeld
Tu en Armani
Tu en Fun For Two
Tu Pa Rococo
Deco Tulips BV
Tu en Candy Prince
ALARM
92222

# These traders need professional competence

- Knowledge
  - product quality
  - market
- Skills
  - multi-tasking
  - information processing
- Attitudes
  - stress-tolerance
  - feeling for sales
  - open for change

Mulder, M. (2014). Conceptions of Professional Competence. In: S. Billett, C. Harteis, H. Gruber (Eds). *International Handbook of Research in Professional and Practice-based Learning.* Dordrecht: Springer. pp. 107-137.

# My understanding of competence

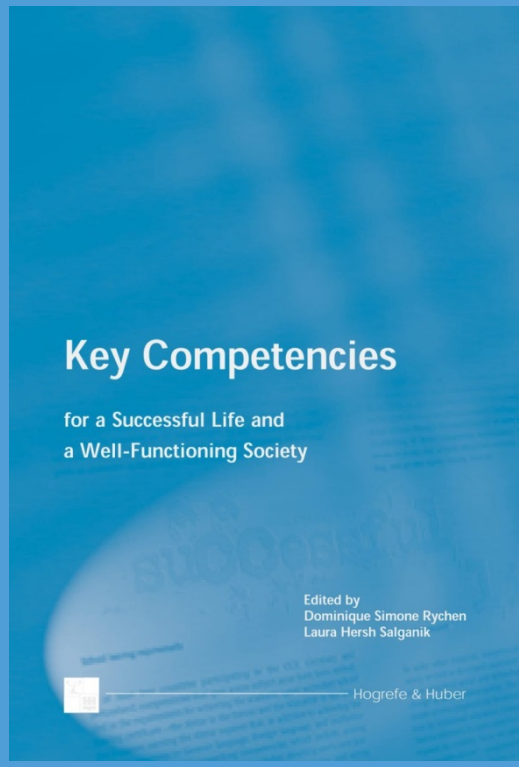
1. integrated capabilities
2. consisting of knowledge, skills, and attitude clusters
3. needed in a certain profession, occupation, job, role, organisation, or task situation
4. which are conditional for sustainable effective performance, including
   - problem solving
   - realizing innovation
   - creating transformation

# Competencies for the future

- Key competencies
- 21st Century Skills
- Essential learning outcomes
- Survival skills
- Critical competencies
- Global competency
- Competence 3.0

# DeSeCo Model of Key Competencies, 2003

- Interacting in heterogeneous groups
  - relating well to others
  - cooperating
  - managing and resolving conflict
- Acting autonomously
  - acting within the big picture or the larger context
  - forming and conducting life plans and personal projects
  - defending and asserting one's rights, interests, limits, and needs
- Using tools interactively
  - using language, symbols, and text interactively
  - using knowledge and information interactively
  - using technology interactively



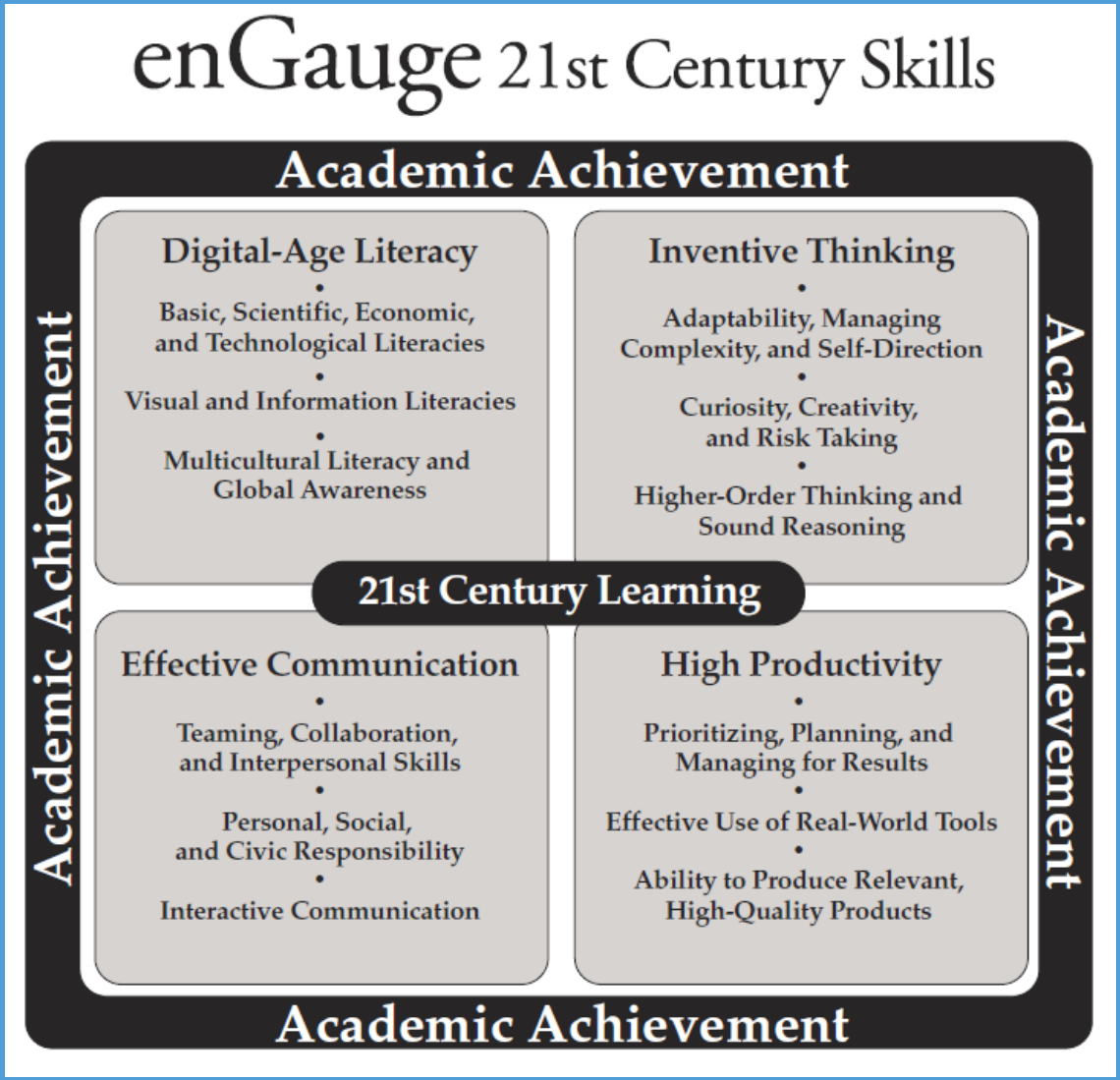

Rychen, D.S. and L.H. Salganik (Eds) (2003), *Key Competencies for a Successful Life and a Well-Functioning Society.* Cambridge/Göttingen: Hogrefe and Huber, .

# Key competences (2006 European Union)

1. Communication in the mother tongue
2. Communication in foreign languages
3. Mathematical competence and basic competences in science and technology
4. Digital competence
5. Learning to learn
6. Social and civic competences
7. Sense of initiative and entrepreneurship
8. Cultural awareness and expression

http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=URISERV:c11090&from=EN

# 21st Century Skills (NCREL/Metiri Group, 2003)




Source: http://pict.sdsu.edu/engauge21st.pdf

# The Essential Learning Outcomes – AAUC, 2008

Beginning in school, and continuing at successively higher levels across their college studies, students should prepare for twenty-first-century challenges by gaining:

## Knowledge of Human Cultures and the Physical and Natural World

- Through study in the sciences and mathematics, social sciences, humanities, histories, languages, and the arts

***Focused*** *by engagement with big questions, both contemporary and enduring*

## Intellectual and Practical Skills, including

- Inquiry and analysis
- Critical and creative thinking
- Written and oral communication
- Quantitative literacy
- Information literacy
- Teamwork and problem solving

***Practiced extensively****, across the curriculum, in the context of progressively more challenging problems, projects, and standards for performance*

## Personal and Social Responsibility, including

- Civic knowledge and engagement—local and global
- Intercultural knowledge and competence
- Ethical reasoning and action
- Foundations and skills for lifelong learning

***Anchored*** *through active involvement with diverse communities and real-world challenges*

## Integrative Learning, including

- Synthesis and advanced accomplishment across general and specialized studies

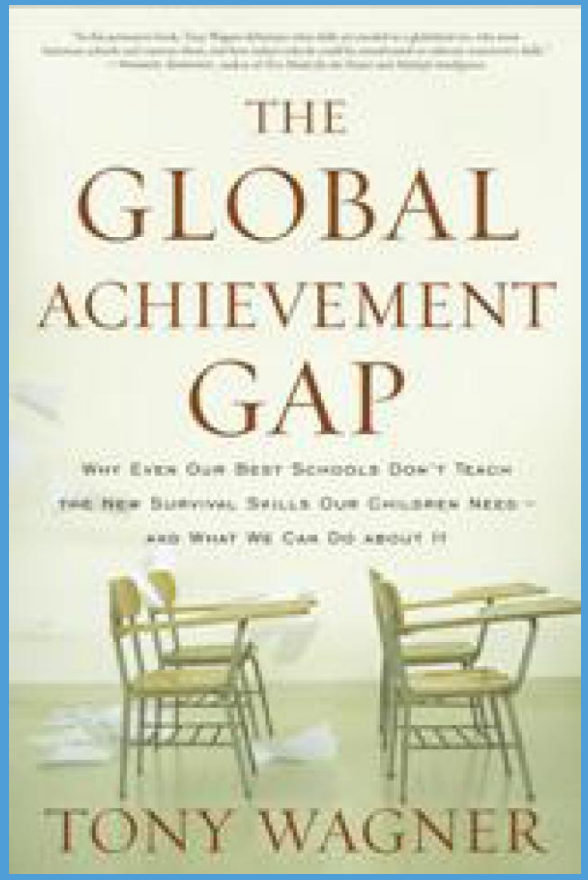
***Demonstrated*** *through the application of knowledge, skills, and responsibilities to new settings and complex problems*



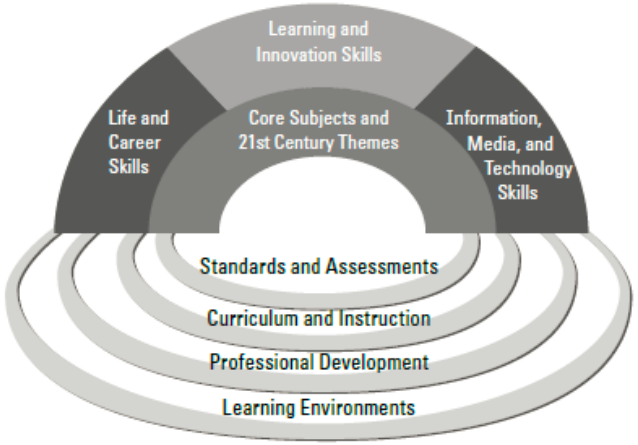
Source: https://secure.aacu.org/AACU/PDF/GlobalCentury_ExecSum_3.pdf

# Wagner - Seven Survival Skills for today's students, 2010

1. Critical Thinking and Problem-Solving
2. Collaboration across Networks and Leading by Influence
3. Agility and Adaptability
4. Initiative and Entrepreneurialism
5. Effective Oral and Written Communication
6. Accessing and Analyzing Information
7. Curiosity and Imagination



# P21 - 21st Century Skills Framework (2015)




**Core Subjects**
- English, Reading, or Language Arts
- World Languages
- Arts
- Mathematics
- Economics
- Science
- Geography
- History
- Government and Civics

**21st Century Themes**
- Global Awareness
- Financial, Economic, Business, and Entrepreneurial Literacy
- Civic Literacy
- Health Literacy
- Environmental Literacy

**Learning and Innovation Skills**
- Creativity and Innovation
- Critical Thinking and Problem Solving
- Communication and Collaboration

**Information, Media, and Technology Skills**
- Information Literacy
- Media Literacy
- Information and Communications Technology (ICT) Literacy

**Life and Career Skills**
- Flexibility and Adaptability
- Initiative and Self-Direction
- Social and Cross-Cultural Skills
- Productivity and Accountability
- Leadership and Responsibility

**21st Century Education Support Systems**
- 21st Century Standards and Assessments
- 21st Century Curriculum and Instruction
- 21st Century Professional Development
- 21st Century Learning Environments

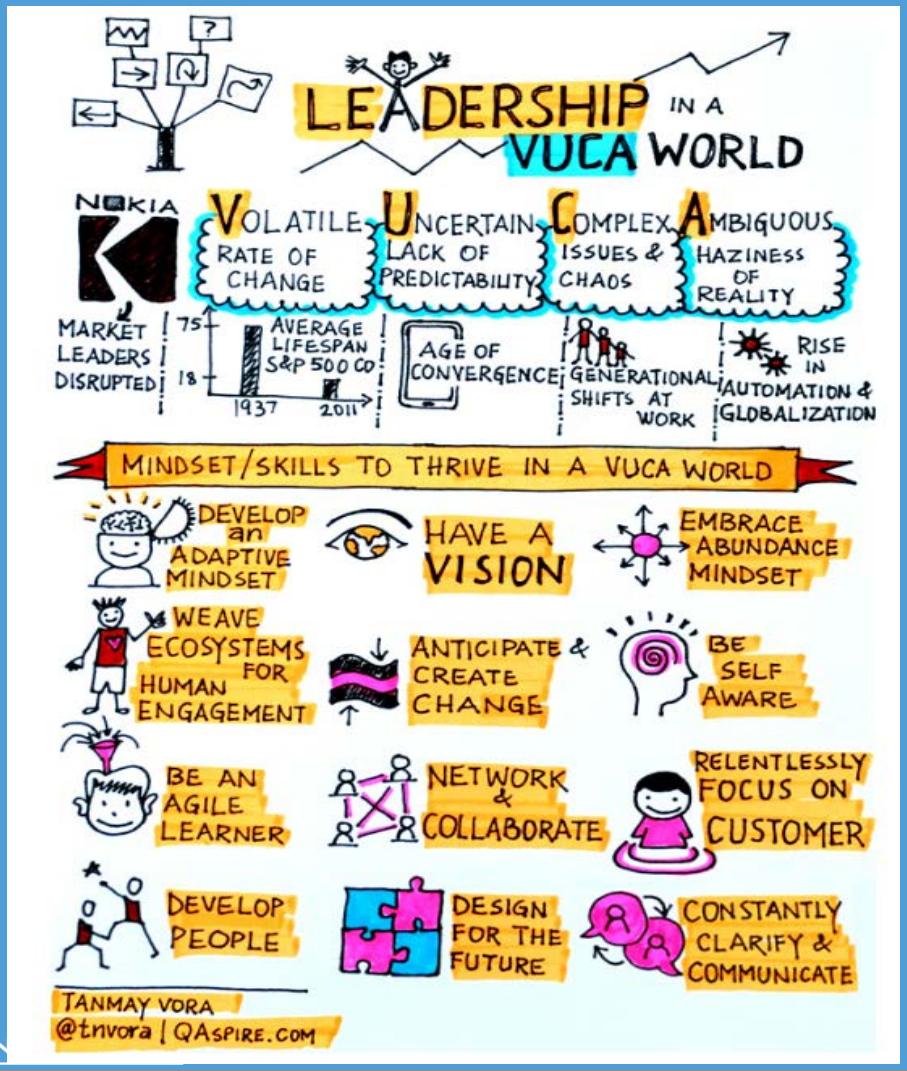
*Source: Partnership for 21st Century Skills, 2009a. Reprinted with permission.*



http://www.p21.org/storage/documents/docs/P21_Framework_Definitions_New_Logo_2015.pdf

# Critical Competencies for Leadership in the Future

(Vora, 2015)

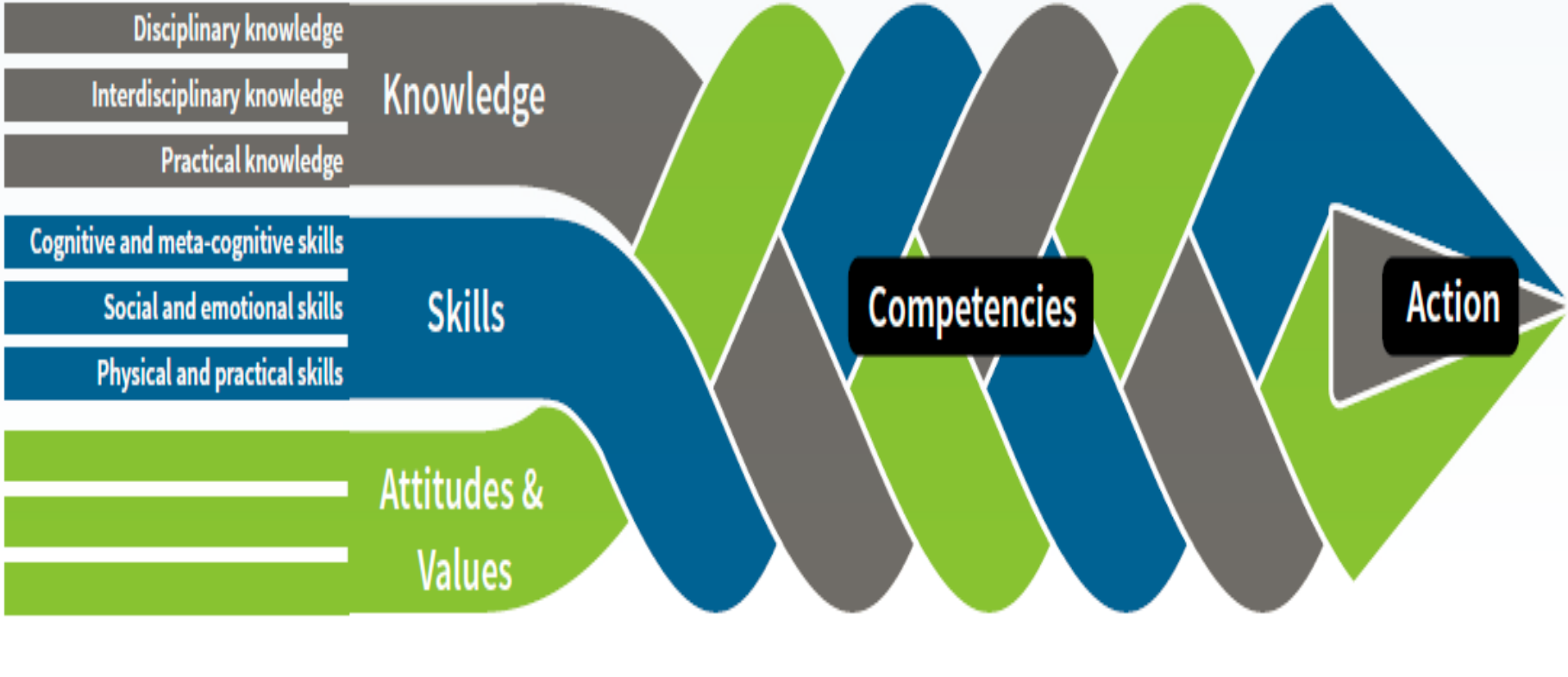





Source: http://qaspire.com/2016/01/06/leadership-skills-for-the-future/

# Global competency for an inclusive world

(OECD, 2016)




Source: https://www.oecd.org/pisa/aboutpisa/Global-competency-for-an-inclusive-world.pdf

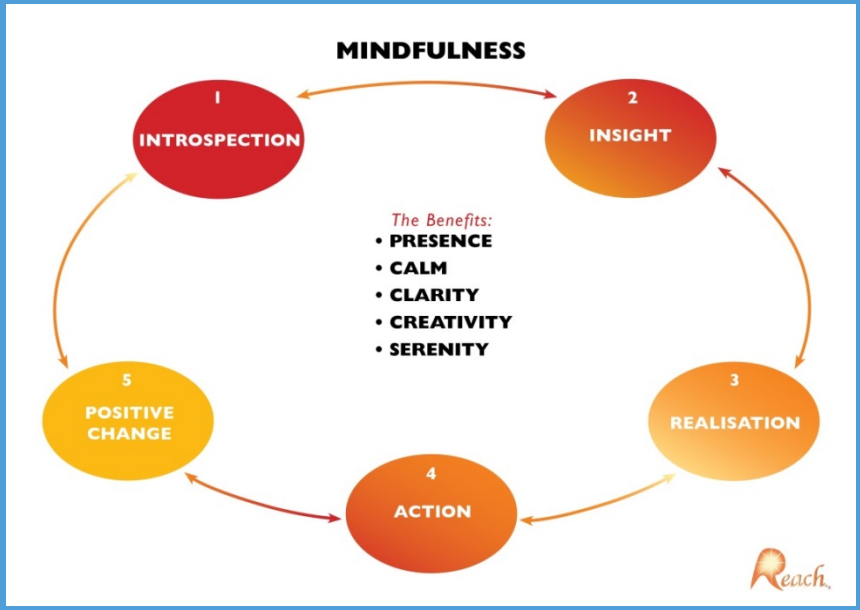
# Competence 3.0 – for unknown future

- Ambiguity handling
- Argumentative reasoning
- Balancing interests
- Complex problem solving
- Computational thinking
- Creativity - creation
- Entrepreneurship
- Global competence

https://082kshiprachowdharyim21.files.wordpress.com/2014/07/transformational_leadership.gif

# Competence 3.0 – for unknown future – Cont'd

- Intuition
- Mindfulness
- Negotiating meaning
- Professional identity
- Resilience
- Sustainability
- Transformation
- Uncertainty handling




http://www.thereachapproach.co.uk/approach/mindfulness-144/

Self-management and career competence
Personal-professional competence
Integrative learning competence
Social-professional competence
Disciplinary and interdisciplinary competence

**Personal-professional competence**

- Adaptability, flexibility, agility
- Anticipate and create change
- Big picture visioning, global competence
- Civic competence – balancing, defending/asserting rights, interest, limits, needs
- Cultural awareness and expression
- Curiosity, imagination, and creativity
- Emotions handling competence
- Ethical reasoning and action
- Health competence
- Intuition, mindfulness and integrity
- Managing complexity
- Physical competence
- Reflection and self-awareness competence

- Clarification competence
- Collaboration in networks
- Creating ecosystems for engagement
- Interactive communication skills
- Managing and resolving conflicts
- Meaning negotiating competence
- Multicultural literacy
- Relating well to others
- Social, interpersonal, cooperation competence
- Teamwork

# Social-professional competence

# Self-management and career competence

- Acting autonomously
- Self-regulation competence
- Civic knowledge and engagement
- Life planning competence
- Personal project planning competence
- Responsibility
- Managing for results
- Prioritizing
- Productivity
- Accountability
- Argumentative reasoning
- Resilience and stamina
- Sense of initiative, innovation and entrepreneurialism
- Calculated risk taking competence
- Lifelong learning competence

- Critical thinking and complex problem solving
- Financial, economic, business literacy
- Higher order thinking, sound reasoning
- Inquiry and analysis
- Mathematics literacy
- Social sciences and humanities literacy
- Languages literacy
- Arts literacy
- Digital (ICT) literacies
- Media and information literacy
- Reading, writing, numeracy, computational competence
- Science, technology, design and inquiry literacies
- Environmental literacy

**Disciplinary and interdisciplinary competence**

# Integrative Learning Competence

- Ambiguity and uncertainty handling
- Dealing with vulnerability and ambiguity
- Developmental competence
- Evaluation competence
- Knowledge co-creation competence
- Leadership competence
- Synthesizing competence
- Sustainability competence
- Transformation competence

# Summarizing:

- There is a *wide variation* in competence theories
- But the concept is more *popular* than ever
- The competence approach is also *criticized*
- The concept has a long history – now *institutionalized*
- Competence-based education concentrates on *known* jobs
- We must concentrate on competence for the *unknown future*
- Research needed into *aligned learning arrangements*

# Competence Theory, Research and Practice
# International conference 19-21 October, 2016

## Competence 2016 Wageningen

International conference
on competence theory,
research and practice

**COMPETENCE 2016**
**WAGENINGEN** | OCTOBER 19 - 21, 2016

Registration Form

The field of competence studies has grown exponentially. It has gained wide interest in all sectors of education, in various types of organizations, in research and in consultancy. Competence-based education, training and development, competence management and core-competence strategy have been blossoming since the 1960s.

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# Thanks – Questions?

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