The Global Need for Competence: Competence-based VET and Implications for Policy and Practice

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The research and publications of ECS...
represent various competence themes...

- Argumentation competence (see Noroozi et al)
- Competence assessment (see Gulikers et al)
- Entrepreneurial education and learning (see Lans et al, Karimi et al and Baggen et al)
- Hybridization of VET (Cremers et al)
- Innovation competence (see Du Chatenier et al)
- Intercultural competence development (see Popov et al)
- Interdisciplinarity competence development (see Spelt et al)
- Oral presentation competence (see Van Ginkel et al)
- Training for practical competence (see Khaled et al)
- Regional learning (see Oonk et al)
- Social responsibility competence (see Osagie et al)
- Teaching competence (see Kasule et al and Alake-Tuenter et al)
- Teacher team work and learning (see Bouwmans et al and Zoethout et al)
...and show that there is a wide diversity of competence theories and practices.
To create an overview we developed the book CbV&PE, 2017

- 1142 pages
- 50 chapters
- ≥ 85 authors
- from all continents
- Lead questions-answers
- Theories
- Policy developments
- CBE systems features
- Competence domains
- Synthesis
- Subject index
- Author index
What will be the Agenda of my talk?

1. Competence-based VET: a worldwide trend
2. Conceptual variations of the competence approaches and practical examples
3. Further pitfalls of the integrated CBVET approach
4. My theoretical perspective
5. International education development cooperation
6. Lessons for policy and practice
7. Conclusions
1. Competence-based VET: a worldwide trend
The beginnings: Code of Hammurabi, 1792-1750 BCE ‘... Hammurabi, le roi compétent ...’

Laws of justice which Hammurabi, the wise king, established. A righteous law, and pious statute did he teach the land.

Translated by L.W. King (1910); Edited by Richard Hooker
The present: Current state of competence practice

- Professional associations – competence frameworks
- Governmental organizations – competencies of teachers
- Testing companies – competence measurement tools
- Consultancy firms – competence dictionaries, advisory services for assessment and development
- Organizations – competence management systems
- Educational institutions – implemented qualifications frameworks in which competencies are integrated.
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.

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
India – VET project of the German Chambers of Commerce

VETnet Pilot Project
Pune, March - May 2015

German Chambers worldwide network (AHK) for cooperative, work-based Vocational Education & Training
Bangladesh, 2012

Implementing Competency-Based Training (CBT) in Bangladesh

CONCEPT DESCRIPTION
Nigeria

FEDERAL REPUBLIC OF NIGERIA
FEDERAL MINISTRY OF LABOUR AND PRODUCTIVITY
(SKILL Development and Certification Department)
SKILL UPGRADING AND VOCATIONAL TRAINING CENTRE
U. Lancaster Road, Opp. Queens College, Onike, Yaba, Lagos.

In Collaboration with

AATA ENERGY NIG. LTD.

Offers

COMPETENCE BASED TECHNICAL & VOCATIONAL TRAINING
FOR TRADE TEST, NABTEB MODULAR AND CITY, GUILDS IVQ
AND OTHER INTERNATIONAL CERTIFICATION.

The courses includes:

- MOBILE CRANE OPERATION
- RIGGING AND SIGNAL MAN
- FORKLIFT OPERATION
- SCAFFOLDING
- PORT OPERATION
- 3G/4G WELDING
- FABRICATION TECHNOLOGY
- INDUSTRIAL MACHINING
- DOMESTIC ELECTRICAL INSTALLATION & MAINTENANCE
- INDUSTRIAL ELECTRICAL INSTALLATION & MAINTENANCE

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E-MAIL: info@aatalearning.com, aatalearning@gmail.com
Rwanda, 2015

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’Ishuke
- Inyandiko ivuguruye ikubiyemwa amabwiriza ayanye 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
Competence frameworks and alignment in VET

After Biggs’ theory of strategic alignment
2. Conceptual variations of the competence approach and practical examples
# Three groups of competence theories

<table>
<thead>
<tr>
<th></th>
<th>Context</th>
<th>Pitfalls</th>
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<tbody>
<tr>
<td>1.</td>
<td>Functional behaviourism</td>
<td>Training</td>
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<td>2.</td>
<td>Integrated occupationalism</td>
<td>Education</td>
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<td>3.</td>
<td>Situated professionalism</td>
<td>Development</td>
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</tbody>
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![Cartoon Image](image.png)

*Your résumé is lame, but you’re tall, so you must be competent.*

*You’re hired. Let me show you around.*

*I’m what you call a good judge of people.*
Three types of competencies

1.0 – for specific tasks
   Outdated curriculum

2.0 – for known jobs
   Replication logic

3.0 – for the unknown future
   Transformative learning

The future is an unknown, but a somewhat predictable unknown. To look to the future we must first look back upon the past. That is where the seeds of the future were planted. I never think of the future. It comes soon enough.

(Albert Einstein)
Dimensions in definitions of competence

1. centrality
2. contextuality
3. definability
4. developability
5. dynamic nature
6. knowledge-inclusion
7. measurability
8. mastery level
9. performativity
10. transferability
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
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

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

http://canmeds.royalcollege.ca/en/framework
Paradigms - learning theories

- Social-constructivism
  - Risk of too little attention for knowledge component in the curriculum
  - Risk of reliability of competence assessments
  - Follows the logic of work-process knowledge

- Cognitivism
  - Risk of lack of authenticity and recognition by employers
  - Risk of lack of ecological validity of competence testing
  - Follows the logic of scientific knowledge
Example: ROC Drenthe College

- All ROCs have incorporated CBVE
- Legal requirement since 2011-2012
- Competencies integrated in Qualification Frameworks
- Good alignment with needs of companies
- Focus on knowledge, skills and professional attitudes
- Students are working in teams
- Gradual increase of responsibility
- Projects provided by organizations in region
- Assessment of critical job tasks by certified assessors
- Teachers act as learning coaches or guides
Roles of stakeholders in learning cycle
Example: Wageningen University
CBE Development approach

- Key competencies defined
- Competence-course matrices
- Search for overlap and white spots
- Outlining learning lines
- Formulating learning outcomes
- Revising course descriptions in Study Handbook
- Defining Assessment Strategies
- Adjusting Course Guides
- Check internal consistency by Exam Committee
- Special attention for Academic Consultancy Training
‘Academic Consultancy Training’ – MSc student projects
Associazione Cometa, Como, Italy
Mood boards – textile design – fabric printing – decoration – recycling furniture
Castadiva interior design and decoration
Inclusion: training of NEET students
3. Further pitfalls of the integrated CBVET approach
Competence-based VET - pitfalls

1. The competence concept
2. Standardisation
3. School and workplace learning
4. Determining learning activities
5. Assessment of competencies
6. Changing teacher roles
7. Competence-based management

4. My theoretical perspective
Competence in practice; what does it mean?
Flower traders need professional competence

- **Knowledge**
  - product quality
  - market

- **Skills**
  - multi-tasking
  - information processing

- **Attitudes**
  - stress-tolerance
  - feeling for sales
  - open for change

My understanding: competencies are...

1. integrated capabilities,
2. consisting of clusters of knowledge, skills, and attitudes,
3. conditional for sustainable effective performance, including
   - problem solving
   - realizing innovation
   - creating transformation,
4. in a certain profession, occupation, job, role, organisation, or situation.
Mature systems of CBE should include...

- Competence frameworks
- Implementation strategy
- Acknowledgement of prior learning
- Formative competence assessment
- Authentic summative competence assessment
- Laddering competence levels
- Competence-based school-HRM
Principles of Competence-based VET

1. The competencies that are foundation for the curriculum are defined
2. Vocational core problems are the organising unit for (re)designing the curriculum
3. Competence-development of students is assessed frequently (before, during and after the learning process)
4. Learning activities take place in several authentic situations
5. In learning and assessment processes knowledge, skills and attitudes are integrated
6. Self-responsibility and (self)reflection of students are stimulated
7. Teachers both in schools and practice fulfil their roles as coach and expert in balance
8. A foundation is realised for lifelong learning of students

Wesselink et al, 2007
Wesselink et al, 2010
Sturing et al, 2011
Models of competence for future life

- DeSeCo Model of Key Competencies (2003).
- Key competences (2006 European Union).
- 21\textsuperscript{st} Century Skills (NCREL/Metiri Group, 2003).
- The Essential Learning Outcomes (AAUC, 2008).
- Seven Survival Skills for today’s students (Wagner, 2010).
- Critical Competencies For Future Leadership (Vora, 2015).

Competence 3.0 – for the unknown future

- Ambiguity handling
- Argumentational reasoning
- Balancing interests
- Complex problem solving
- Computational thinking
- Creativity - creation
- Entrepreneurship

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

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

Self-management and career competence

Personal-professional competence

Integrative learning competence

Social-professional competence

Disciplinary and interdisciplinary competence

www.mmulder.nl
5. International Educational Development Cooperation
Project staff of Mountains of the Moon University, Fortportal, Uganda
Project staff Bukalasa Agricultural College, Wobulzenzi, Uganda
Project staff in Jimma, Ethiopia
Typical conceptual framework

- Research information flows to Education and Training
- Knowledge construction in action
- Learning on-the-job
- Flower Farmers
- Horticulture Education and Training
- Flower Sector - Economy

Research

Knowledge circulation

Research information flows to farmers
Schematic overview of project approach

Figure 4.1 Schematic overview of project approach

WP 8
Project Management

WP 1
Staff Development

WP 2
Curriculum Development

WP 3
Course Development

WP 4
Strengthening Research

WP 5
Upgrading Facilities

WP 6
Community projects

WP 7
Institutional Development

Needs Assessment

Designing

Implementation

Evaluation & Revision

Professional staff & MSc/PhD graduates

Competence based curricula certified

Courses and course material

Practical research agenda

Practical training facilities operational

Staff trained & Pilot projects running

Institutional framework for horticultural education
Typical working packages

- Staff development (WP 1)
- Curriculum development (WP 2)
- Course development (WP 3)
- Strengthening research (WP 4)
- Upgrading facilities (WP 5)
- Community-based education and training (WP 6)
- Institutional development (WP 7)
- Gender mainstreaming
- HIV/AIDS mainstreaming
Typical curriculum development activities

- Labour market analysis
- Analysis of task inventories of workers
- Development of occupational profiles
- Development of competence profiles
- Curriculum development
- Development of teaching guides
Typical curriculum development activities

- Development of learning materials
- Analysis of labour market entry of graduates
- Stakeholders’ perceptions of training programs
- Competence-based education philosophy and its effects
- Sustainability analysis of the competence-based education approach
6. Lessons for policy and practice
Governance of current VET

- Provide good examples of practice
- Provide sufficient facilities
- Support research on the efficacy of CBE
- Review experience of employers with CBE graduates

Organization and management of VET

- Develop competence framework for all co-workers at all levels
- Integrate competence management in annual performance reviews
- Make managers accountable for implementing competence management
- Give good example by committing to competence self-assessment and development
Career management of VET teaching staff

- Career perspective; role descriptions; competence framework
- Provide teaching and learning environment and resources
- Stimulate CB assessments + feedback for professional development
- Stimulate innovation, collaboration and team learning

Curriculum and learning

- Determine level of implementation of principles of CBE
- Make and realize an action plan for CB curriculum redesign
- Specify changes in the teaching-learning process
- Move towards assessment for learning and assessment as learning
- Include authentic learning experiences in the field of study
Teacher education and professional development in VET

- Redesign teacher education by making it competence-based
- Link teacher education up with schools
- Make vocational teacher education a first choice of study
- Stimulate an entrepreneurial, research and transformational attitude
- Create possibilities for teachers to keep up to date
- Focus on competence for the unknown future

VET quality assurance

- Develop and apply quality standards
- Develop and apply procedure for quality assessment
- Develop procedures to implement quality recommendations
- Monitor quality improvement progress – midterm self-evaluations
7. Conclusions
Politics: CBE is more popular than ever...

Obama Mentions SNHU and Competency Based Education

https://www.youtube.com/watch?v=WjNYElRzRtI
Movies: Skyfall (2012) James Bond suggests his new young Quartermaster is incompetent
Music: Compétence by Sira Kouyaté (2017)

- Sira Kouyaté Compétence: https://www.youtube.com/watch?v=7hZGyGpY3v0
Conclusions

- Worldwide competence-based practices are more popular than ever.
- There is a wide variation in competence theories and practices.
- The concept has a long history – and is now institutionalized.
- Competence-based VET approaches have various pitfalls.
- Many competence-based education initiatives concentrate on known tasks and present jobs.
- We must further think about competence for the unknown future.
- There are many recommendations for policy and practice.
Thank you very much!
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- Twitter: @MartinMulder
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