Competence-Based Vocational and Professional Education: A Global Overview

2 September, 2015

International VET Conference, University of Bremen, ITB


Martin Mulder, PhD
Professor and Head of Department
Education and Competence Studies group
Wageningen University
The Netherlands

www.mmulder.nl
International VET

- Large diversity in VET
  - Esteem
  - Labour market relevance
  - Vertical mobility
- Many innovations during last decades
  - International cooperation
  - Competitions
  - Association development
- Wide range of theories for VET
Wide range of theories for VET

- 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
Competence theory is the foundation of a major systems innovation in VET

- Society needs a competent workforce
- VET should not produce incompetent graduates
- CBE is institutionalized by EQF
Reviews and critiques have shown problems inherent to CBE

- Ellström, 1997
- Lum, 1999
- Rothwell and Lindholm, 1999
- Westera, 2001
- Hager, 2004
- Delamare Le Deist & Winterton, 2005
- Hyland, 2006
- Mulder, Weigel and Collins, 2007
- Mulder, 2014

- Competence as goal of education is an empty platitude
- A generic notion of competence cannot differentiate between CBE and non-CBE
- It cannot specify curriculum design and assessment practice
- An insufficient distinction is being made between competence as aim and a competence-based education strategy
- There is no evidence of a causal relationship between competence as aim and strategy
- Need to emphasise ‘learning to do’ in VET is incontrovertible
- But desired outcomes cannot be precisely formulated
Diversity in competence concept

- There is a *mer à boire* of theories, conceptions, strategies and methods to model, develop and assess competence.
- What are the origins?
- Which is the way to go?
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

- 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

- Competence is 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.

- 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
- Criterion-based job analysis may lead to over-detailed tests
- Competencies should be identified by what superior performers do
Further theory and research

- *Core competence* – CK Prahalad and Gary Hamel (1990)
Early competence frameworks

- Roth, 1971
  - Object competence
  - Social competence
  - Self-competence

- Habermas, 1984
  - Cognitive competence
  - Linguistic competence
  - Interactive competence

- Erpenbeck, Heyse, 1999
  - Subject-specific competence
  - Methods competence
  - Social competence
  - Reflection competence
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

Domain-specific competence frameworks

- Interdisciplinarity in higher education - Spelt et al (2009)
- 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)
CANMEDS (2005) - Key Competencies: Physicians are able to...

1. Function effectively as consultants, integrating all of the CanMEDS Roles to provide optimal, ethical and patient-centered medical care;

2. Establish and maintain clinical knowledge, skills and attitudes appropriate to their practice;

3. Perform a complete and appropriate assessment of a patient;

4. Use preventive and therapeutic interventions effectively;

5. Demonstrate proficient and appropriate use of procedural skills, both diagnostic and therapeutic;

6. Seek appropriate consultation from other health professionals, recognizing the limits of their expertise.
What is competence?

Towards synthesis
Flowers
Trading at Flower Auction

Workplace requires competent professionals:

- **Knowledge**
  - product
  - quality
  - market

- **Skills**
  - multi-tasking
  - processing information
  - instant decision making

- **Attitudes**
  - stress-tolerance
  - feeling for sales
My understanding of competence

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
Competence as binary concept

- **Proficiency, mastery, ability**
  - Practical capability to perform

- **Authority, licensure**
  - Legal, institutional, organizational, cultural or regulated right, power, approval or assignment to act, decide, (dis)approve or regulate
Three competence theory approaches

1. Functional behaviourism - Training
2. Integrated occupationalism - Education
3. Situated professionalism - Development
Book project

Competence-based Vocational and Professional Education: Bridging the World of Work and Education
Objectives of the book

- To collect the diverse viewpoints regarding CBE
- To unravel controversies in CBE debates
- To deepen the understanding of CBE theory
- To review policies and practices regarding CBE
- To assess the value added of CBE
- To point at research priorities in the field of CBE
Parts of the book

I  Theory
II  Competence-based Education as a Global Innovation
III Competence and Key Aspects of Education Systems
IV  Competence Domains
V  Quality and Outcomes
Part I Theory

1. Introduction

I.I Conceptual foundations

2. Professional expertise

3. Domains of occupational competence

4. Qualification and action theory

I.II Critical considerations

5. The epistemology

6. Mindful working and skillful means

7. Teacher professional development

8. The role of knowledge
Part I Theory

I.III Emerging perspectives

9. The integrated view

10. Capabilities and graduate attributes

11. Alignment of education and work

12. Work, neoliberalism and the economy
Part II Competence-based Education as a Global Innovation

II.I The USA: where it all began
13. Competence-based education in the USA

II.II Diverse European approaches
14. The competence debate in the European Union
15. National Vocational Qualifications and competence in the UK
16. Workplace learning in the UK
17. Competence Domains in Germany
18. Competence development in France
19. Competence in Lithuania and Estonia
20. The support by technology in the Italian context
Part II Competence-based Education as a Global Innovation

II.III Asian and African approaches

21. Competence-based education in China’s Polytechnics

22. Competence-Based Training in South Asia

23. Competence and TVET-Innovation in Rwanda
Part III Competence and Key Aspects of Education Systems

III.I Generic Competence Frameworks for Education Systems

24. The Academic Competencies and Quality Assurance (ACQA) framework

25. Evaluating vocational curricula with principles of competence-based education

26. ‘4C your way’: a framework for measuring competence growth at various levels
Part III Competence and Key Aspects of Education Systems

III.II Recognition and Assessment

27. Recognition of Prior Learning (RPL)

28. Competence assessment

III.III Competence, Teaching and Learning

29. Professional development

30. Areas of Learning

31. Self-regulation

32. Gamification

33. Scaffolding argumentation competence

Recognition of Prior Learning (RPL)
Are you thinking about studying a Vocational Education and Training (VET) course at CDU? If you've ever studied or completed training, you might be entitled to apply for Recognition of Prior Learning (RPL).
Part IV Competence Domains

IV.I Discipline-Oriented Competence Domains
34. Industrial-technical professions
35. Engineering mechanics
36. Pre-service Teachers Education
37. Medical Education and Competency-Frameworks
   - IV.II Transversal Competence Domains
38. Green skills
39. Complex problem solving
40. Intuition and professional competence
41. Competence in entrepreneurship courses
42. Global competence and student mobility
43. Social competence research
44. Computational thinking
Part V Quality and Outcomes

45. Quality management of competence-based education
46. Assuring quality in competence assessments
47. Social competence and employability
48. Competence-based education and educational effectiveness

Conclusions, Discussion and Future Trends

49. Conclusions, Discussion and Future Trends
Settling controversies in competence debates – in my view:

- Competence is performance requirement
- The meaning of competence is context-specific
- Competencies are clusters of knowledge, skills and attitudes related to meaningful units of professional practice
- Competence = driver of learning + predictor of performance
- Competence = capability = attribute = expertise
- Competencies can be learned – at variable costs
- Highest level of competence is excellence
- Avoid over-specification of competencies by job analyses
- Competence is inferred by performance assessments
- Competence has a limited expiration date
Opposing the views of Lum (1999) There is now significantly more competence in competence theory, research and practice

- Desired outcomes of CBE are defined in competence frameworks
- Therefore, competence as the goal of education is not an empty platitude
- There are operational strategies for CBE curriculum design and authentic assessment; they are specific for CBE
- So, the distinction between competence as aim and a competence-based education strategy is operational
- This implies a causal relationship between competence as aim and the CBE strategy
- Clearly, CBE and non-CBE practice can be distinguished
Effectiveness of CBE - Lorenz Lassnigg

Literature search:

- 16% of hits on competence (etc.) mentioned issues of effectiveness, with an increase to almost 40% during 2011-2014

- In the effectiveness literature there was no single reference which indicated an analysis of the effectiveness of CBE

- None of the studies found allows for a comparison of CB-learning with other forms of learning
Final conclusion

- CBE is global trend with waves
- There is little evidence of the *effectiveness* of CBE
- A big *research effort* is needed to show the added value of CBE