Competence and Higher Education

Martin Mulder
Wageningen University
Chair group of Education and Competence Studies
martin.mulder@wur.nl
www.ecs.wur.nl
April 20, 2006
The competence train is riding and everybody wants to ride along
Many educational experts are very curious about competence development
Factors that increase educational effectiveness

- Contact student – teacher
- Cooperative learning
- High expectations
- Time on task
- Timely constructive feedback

What does the concept of competence add?
Competence:

Directs educational aims of programs and outcomes of courses.
Competence:

Old wine in new barrels???
History of the concept of competence

- Old-Dutch – 1504
- French - ‘compétent’
- Latin
  - ‘competens’: being able to; allowed by law/regulation
  - ‘competentia’: (cap)ability and permission
Plato used the concept in 380 BCE
The Code of Hammurabi (1792-1750 BCE) points at his competence
Competence: a two-face concept

- **Sufficient performative proficiency**
  - Minimal activity capability
  - Ability
  - Can do

- **Formalized permissive authorization**
  - Judicial, institutional or organizational regulated action permission
  - Power-responsibility
  - May do
Competence in Europe

- EU – Competence management in organizations
- UK – Competence in NVQs
- France – Bilan de compétences
- Germany – Handlungskompetenz
- Belgium – Guidance
- Portugal – Recognition, Validation and Certification of Competencies
- Netherlands – Competence-based Qualification Structure
Public authority, Italy, 2004
Core competence of the organisation

Our Competencies

- Food, chemical products and health
- Environment and sustainability
- Nuclear activities
- Horizontal activities
- Other activities
Center for IT consultancy, support, systems management, NL

Betrouwbare automatisering is van levenbelang voor uw organisatie. Niet alleen de computer op uw bureau, maar alles wat daarmee samenhangt! Zoals bijvoorbeeld de mailserver, filiaalserver, internverbinding en het netwerk.

Het gaat er niet alleen om dat de hard- en software aanwezig zijn, maar vooral dat alles een geheel vormt. Een betrouwbare geheel dat werkt.

Wij adviseren u en bieden ondersteuning bij het opstellen van een betrouwbare automatiseringsstelsel. Wij beheren en onderhouden uw totale automatisering, die gewend is samenwerkend met uw eigen mensen.

Consultancy
Een onpartijdig advies, waar kunt u op rekenen. Door dat we geen hard- en software leveren kan u ervan uitgaan dat onze adviezen slechts gericht zijn op het verbeteren van uw automatisering.

Support
Vakkundige support is één van de functies van uw automatisering. Professioneel support verlenen is ons vak. Hierbij geldt dat wij alles weten van de Mac, met name in een multitabblad omgeving.

Beheer
Structureel beheer is al onderhoud aan een eigendom. Door regelmatig onderhoud worden uw systemen betrouwbare en neemt het aantal incidenten aantoonbaar af.

http://www.competence.nl/
Marketing corporate social responsibility

The ‘World of difference’ – sponsoring Welfare

‘The game starts at 08/03/05. The term for submission closes at 12/04/05 at 17:00. Per person only one proposal Can be submitted.
It regards a competence game; chance does not play a role in determining the winners. Every proposal shall be independently evaluated as to its humanitarian and charitative value and feasibility.’
Promoting Life Long Learning – Recognition, Validation and Certification of Competencies, PT

QCA III 2000-2006

INDICAÇÃO DO PROGRAMA OPERACIONAL

DESIGNAÇÃO DA MEDIDA DO PO EM QUE SE ENQUADRA O PROJECTO

Medida 4 - Educação e Formação ao Longo da Vida

Ação 4.1. - Certificação de conhecimentos/competências adquiridas ao longo da vida

Grupo-alvo do Projecto

Adultos maiores de 18 anos, que não possuem o 9º ano de escolaridade. Privilegiem-se os activos, empregados e desempregados, os activos desempregados de longa duração e as mulheres sem actividade profissional.
Vous souhaitez donner un nouvel élan à votre vie professionnelle ? Un bilan de compétences vous aidera à faire le point et à définir un projet. Voici quelques conseils pour profiter pleinement de ce dispositif.

Lydie Colders
Vind een beroep

Ben je op zoek naar informatie over beroepen dan ben je hier aan het juiste adres. We bieden 3 hulpmiddelen om jouw ideale beroep te ontdekken:

**Beroepenchiefes**
Informatie over meer dan 550 beroepen vind je in CO.BRA. (Competentie- en Beroepenrepertorium voor de Arbeidsmarkt - [meer info](http://vdab.be/)). Elke beroepenfiche bevat een beschrijving, basisvæsten en specifieke competenties nodig voor het beroep, producten en werkdoelen en info over de arbeidsomstandigheden. 
Je kan zoeken via [categorie](http://vdab.be/), of via [trefwoord](http://vdab.be/).

**Beroepenfilms**
VDAB maakte meer liefst 107 beroepenfilms. Elke filmje toont een beroep in al zijn facetten: een werknemer vertelt wat de job in de praktijk inhoudt en wat de verwachtingen van de werkgever zijn.

**Beroepsoriëntatie**
Nieuwsgierig welk beroep bij je past? De [VDAB-beroepsoriëntatie](http://vdab.be/) helpt je je weg. Door het invullen van deze test kom je te weten welke beroepen er...
Training center for female craft workers

Germany, 2005
New Competences and Innovations in Logistics at EU level

NOVALOG nomenclature is a proposal for a global vision of the two main logistics functions: "warehousing" and "assistance" (support to the management) and their relation to other logistics jobs. The jobs are separated into four families/groups of jobs: formulating and implementing logistical strategy, purchasing/materials management, production planning and control, and warehousing.

**Group 1:** Formulating & implementing logistical strategy
- Supply chain Manager
- Logistics Manager
- Logistics Analyst
- Logistics Engineer
- Logistics Controller
- Logistics IT-specialist
- Logistics Supervisor

**Group 2:** Purchasing / Materials Management
- Materials Manager
- Packaging Manager
- Purchasing / Procurement Manager
- Purchasing Officer
- Purchasing Clerk
- Stock / Inventory Controller

**Group 3:** Production Planning and Control
- Production Planner and Controller

**Group 4:** Assistance
- Assistance Manager

NOVALOG nomenclature is a proposal for a global vision of the two main logistics functions: "warehousing" and "assistance" (support to the management) and their relation to other logistics jobs. The jobs are separated into four families/groups of jobs: formulating and implementing logistical strategy, purchasing/materials management, production planning and control, and warehousing.
Voici les trois derniers titres parus.
Cliquez sur le nom de l'auteur pour lire sa notice biographique.
Cliquez sur le titre du manuel pour afficher des informations plus détaillées.

**Maintenez Windows XP en pleine forme** [Rés 0500]
(Michael E. Karto)

Pas d'avis sur ce manuel

Les ordinateurs sont devenus des machines très performantes, mais il est presque certain que nous rencontrerons, un jour ou l'autre, un plantage. Un programme qui s'installe mal, un virus qui fait des dégâts, un composant défaillant ou tout simplement Windows XP qui commence à fonctionner moins bien.

Familiarisez-vous avec les fichiers systèmes, utilisez la mise à jour du système, luttez contre la fragmentation, installez une protection antivirus, un freeware et un anti-virus.
The mission of the National Center for Cultural Competence (NCCC) is to increase the capacity of health and mental health programs to design, implement, and evaluate culturally and linguistically competent service delivery systems.

- Conceptual Frameworks/Models, Guiding Values and Principles
- Definitions of Cultural and Linguistic Competence
- More about the NCCC
- Tools and Processes for Self-Assessment
Information Literacy Competency Standards for Higher Education

These standards were reviewed by the ACRL Standards Committee and approved by the Board of Directors of the Association of College and Research Libraries (ACRL) on January 18, 2000, at the Midwinter Meeting of the American Library Association in San Antonio, Texas. These standards were also endorsed by the American Association for Higher Education (October 1999) and the Council of Independent Colleges (February 2004). A PDF of this document is available.

http://www.ala.org/ala/acrl/acrlstandards/informationliteracycompetency.htm
National Organization for Competence Assurance

The National Organization for Competency Assurance is the leader in setting quality standards for credentialing organizations.

Search our members only membership directory
Join NOCA now
Find a NOCA member
NCCA accreditation information

Answer This Month's Poll Question

NOCA Academy - Seminar II
Register for Making ADA Work for You: Serving your Examiners, Protecting your Exam hosted by the NOCA Academy on Wednesday, March 23rd, 1:00 p.m. - 3:00 p.m. Eastern time.

2005 Sponsorship Opportunities
Attention sustaining and affiliate members: The 2005 Sponsorship Opportunities are now available. Download a sponsor packet today. Fax completed forms to 202/367-2165.

NCCA Sample Application Now Available
Download a FREE copy of the NCCA Sample Accreditation Application. The guide provides examples of the type of documentation expected to demonstrate compliance with the NOCA Standards for the Accreditation of Certification Programs.

http://www.noca.org/index.htm
Examples of fields

- Academic competence
- Professional competence
- Personal competence
- Career competence
- Technical competence
- Task competence
- Behavioral competence

- IT competence
- Cultural competence
- Communication competence
- Information literacy competence
- Entrepreneurial competence
- Etc.
Why Competency-based Education?

- Capability versus diploma
- Employability as goal
- Improvement of alignment of education and work
- Recognition of informally acquired competencies
- Learning path independent assessment
- Independent functioning in society
- Capability to cope with constant and profound change

The knowledge world is not enough
Is knowledge not more important?

- Knowledge = basis
- Competence = additional, integrative
  - is a combination of certification and capability
  - refers to being able to apply knowledge in complex reality
  - is directly connected with successful performance
  - is aligned with the HRM practice of companies
  - is aimed at employability
  - comprises behavioral component and is linked to role
  - is context specific and comprises attitudinal aspect
  - comprises insight and reflection on own behaviour
Principles of Competence-based Education

- The competencies, which are the basis for the study program, are defined.
- Professional core problems are the organising unit for (re)designing the curriculum (learning and assessment).
- Competence-development of students is assessed before, during and after the learning process.
- Learning activities take place in different authentic situations.
Principles of Competence-based Education

- In learning and assessment processes, knowledge, skills and attitudes are integrated.
- Self-responsibility and (self)-reflection of students are stimulated.
- Teachers both in school and practice fulfil their role as coach and expert in balance.
- A basis is realised for a lifelong learning attitude for students.
## Matrix for Competence-based education

<table>
<thead>
<tr>
<th>Principle</th>
<th>not</th>
<th>starting</th>
<th>partial</th>
<th>completely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competencies defined</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Core problems identified</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Assessment aligned</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Authentic learning used</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Integration realized</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Self responsibility stim’d</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Coaching role practised</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Lifelong learning prom’d</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Experiences of teachers

- Formulating of core tasks is difficult
- More attention for intake is necessary
- The link between education and practice of work is good
- The teacher finds the role as coach very difficult
- There is fear of programs that are not consistent
- Learners do not always see the added value of the concept of competency
- Fear for bureaucratic use
- Functionality of assessments vary
- Assessments are more labour intensive
What *has* Wageningen University to do with the concept of competence?

- External legitimation: not necessarily
- Internal educational policy making: implementation
What can Wageningen University do with competence?

- Making program design transparent
- Re-programming of competence development
- Using competencies as linking pin between
  - final qualifications
  - learning goals
  - learning outcomes
  - program and course content
  - program and course organization and
  - assessment
What is Wageningen University doing regarding competence? - The piano

- Division between knowledge and competence in a performance context is impossible.
- For teaching and learning the division can be functional.
- A lot of subject-specific learning is needed, without direct implementation.
- However: the relevance of this knowledge must be clear to the student.
Competence methodology: professional roles – outputs - competencies

- Professionals have roles (researcher, designer, etc.)
- They produce outputs
- These are products or services (articles, advise, etc.)
- To produce or deliver these, they need to be competent
- Competence = knowledge, skills and attitudes as performance requirements
Which competencies are defined for Wageningen University?

In piano:
- Roles
  - Researcher
  - Designer
  - Communicator
- Perspectives
  - Scientific approach
  - Multidisciplinarity
  - Social context
  - International

What about?
- Roles
  - Entrepreneur
  - Policy expert
  - Teacher
- Perspectives
  - Poverty
  - Sustainability
  - Ethics
  - Safety
**How can Wageningen University proceed with competencies?**

- Define core competencies for WU Bsc and Msc
- Define specific program competencies
- Define specific course competencies
- Make competency map by program component
- Map the competencies in the program
- Decide upon further competence alignment
Information on competency map by program component?

E.g.:
For each competency included:
- Learning time allocated
- Achievement level intended (or mastery level)
- Type of competence assessment included
- Explicit-implicit competence development
- Integrated-separate learning time
- Type of learning task
- Organization of learning

These maps can be aggregated in program maps
Assessment criteria

- Authentic assessment
- Formative assessment
- Multi-rater assessment
- Pre-assessment
- Integrated SKA-assessment
- Stimulating self-responsibility
Difficulties

- Structural cooperation with occupational field
- Integrating SKAs in assessment
- Self-responsibility in assessment
- Multi-measurement assessment
- Applying formative assessment
Experiences and perspectives
A uniform set of competencies per final qualification?

- There is no one-to-one relationship between competence and performance
  - e.g. how to write an article
- Neither is there a unique relationship between competencies and final qualifications
  - e.g. being creative and being able to do research
- Competencies are context-specific
  - e.g. reflection for researchers and communicators can differ
- Defining competencies is a deliberative process
  - e.g. defining competencies for research; that depends a lot on the research paradigms that will be included and levels of elaboration to be achieved
Monodisciplinary knowledge

- Is absolutely an essential part of academic education
- Can be seen as an final qualification
- There should be enough room for pure knowledge in the curriculum
- It is the foundation of academic education
- However: students have to learn to apply this Knowledge in a meaningful context
Multidisciplinarity and international context

- These are separate dimensions which hold for all roles
  - e.g. being aware of international dimension in food security management holds for designers and researchers
- They may differ by specific output by role
  - e.g. international communication for researchers (who present academic paper) and entrepreneurs (who want to make a deal)
Competence and knowledge

- Pure knowledge mastery is not the same as competence
  - e.g. the mere understanding a specific micro-economic theory does not yet mean that the student is competent in this field

- Competence regarding knowledge means being able to apply knowledge in a specific situation
  - if the student can apply this theory in solving an economic problem in a business environment, he/she is competent in this field
Final qualification and competence

- Final qualification is a bit odd in the perspective of Life Long Learning.
- They can be seen as final goals of the program, or general competencies (the graduate is able to … is qualified to … allowed to …)
- Competencies are specifications of the final qualifications.
- Different competencies are needed for different roles of graduates.
- One set of competencies (dictionary) is needed for WU.
Learning goals and competencies

- The methodology of formulating learning goals dates back to the fifties of the 20th century.
- The risk is that learning goals get too specific.
- Define affordances for competence development in programs and courses.
- Allocate time for competence development.
- Assess and monitor competence development.