Abstract
This paper’s focus is on the characteristics of successful competence-based curriculum development. First, a brief outline is given of the conceptual basis of CBE and the development of competence-based curricula. Attention is paid to the role of generic competencies in academic competence-based curricula, especially to what constitute ‘academic competencies’. In developing countries many higher education institutions wish support in designing and developing competence-based curricula in a variety of disciplines. Since a competence-based curriculum is dependent on the context of the institution offering the curriculum, the routes that are followed in curriculum development can divert to a great extent. This is illustrated in ‘stories’ of the design and development of competence-based curricula in Masters programmes in three African countries (Mozambique, Ghana and Ethiopia).

Introduction
The concept of competence-based or competency-based education (CBE) and training is interpreted in many ways in education systems all over the world, resulting at one end of a continuum into a tick list of skills and at the other into a set of generic abilities that transcends disciplinary knowledge and skills. Although CBE has secured its place in technical and vocational education, especially at secondary level, only in recent years has the competence-based approach been found as well in higher education. However, this is not without controversy.
CBE signifies a different paradigm compared to ‘classical education’. One of the fears, expressed by adversaries of CBE in higher education curricula and addressed in this paper, is that CBE is too prescriptive, too much skills-oriented and therefore detrimental to the academic character of higher education.

In developing countries many higher education institutions experience a growing gap between their curricula and the demands from society, business and industry for a more flexible workforce with high skills (competencies) in problem solving, team work and project management. Competencies are constructs and are inferred from or expressed in behaviour in a certain context. A competence-based curriculum is therefore dependent on the context of the institution offering the curriculum.
The design and development of competence-based curricula in Masters programmes in three African countries (Mozambique, Ghana and Ethiopia) is an illustration of this context dependency.

It will be argued that the systematic premier route of competence-based curriculum development (sometimes called the ‘royal road’), going from professional profile to graduate profile to curriculum profile means a long, but rewarding path. When this is done along a communicative design approach involving all stakeholders, aspiring curriculum designers will definitely acquire and develop competence in curriculum development.

On competence and competencies
CBE aims to make students more competent through the acquisition of competencies and the further development of the newly acquired or already held competencies. But what is competence or competency? Based on various competence definitions and dimensions of the competence concept, that can be found in the literature, Kouwenhoven (2003) presents a comprehensive definition of competency that can be further clarified in a model, that describes what ‘goes on in the head’ (i.e. processing at cognitive level) when a task is realised. From this model, competency is deduced as ‘the ability to process various inputs in an intentional way’. Or, in a more succinct way:

- **Competency** is the capability to choose and use (apply) an integrated combination of knowledge, skills and attitudes with the intention to realise a task in a certain context, while personal characteristics such as motivation, self-confidence, and willpower are part of that context.

- **Competence** is the capacity to accomplish ‘up to standard’ the key occupational tasks (see below) that characterise a profession. A competent professional shows a satisfactory (or superior) performance. Key occupational tasks are the tasks that are characteristic for a profession. A profession could be described by 20 - 30 key occupational tasks (Hager & Gonczi, 1996).

The broad, general, concept of competence can be understood through the concept of ‘core competency’. **Core competency** is defined as: the set of appropriate competencies needed to accomplish a key occupational task at a satisfactory or superior level. Stated in another way: core competencies are directly linked to key occupational tasks and are integrated clusters of domain-specific and generic competencies.

Competencies can be **domain-specific**, relating to clusters of knowledge, skills and attitudes within one specific content domain related to the profession.
Another group of competencies is called ‘generic’ because they are needed in all content domains and can be utilised in new professional situations (transfer). The name ‘life skills’ is sometimes used for the latter group and indicates that these competencies, because of their transferability, are the basic set of capabilities for the life of today, within and outside the profession.

A relevant question is whether personal traits or characteristics are part of a competency. Some use this elaborated view on competence, others see competencies as instrumental and define competent behaviour as resulting from competencies and personal characteristics. Well known is the ‘iceberg’ model of Spencer and Spencer (1993). Skills and knowledge are ‘discussable’ and observable, as the visible part of an iceberg, but the self-concept, attitudes, values and personality traits are under the surface, not directly observable but part of the factors that drive professional behaviour (see also Korthagen, 2004). In this paper the more instrumental view of competencies is used, where successful behaviour or accomplishment of tasks is the resultant of competencies and personal traits.

On competence-based education

The characteristics of CBE are based on the application of recent findings of the cognitive sciences to the concept of competence. Below a list is given of characteristics that, together, form the ‘archetype’ of a competence-based curriculum (Kouwenhoven, 2003).

- **CBE is oriented to the professional practice.** CBE is based on the future occupational practice of the graduate. The curriculum has an integral set-up in which the profession is central (Boyatzis et al., 1996).
- **CBE is learner-centred and the learning process is central.** The individual worker is central and, based on his ‘competence status’ (already acquired competencies), the competencies are defined that still have to be acquired and developed. Other aspects of a learner-centred approach in CBE are the use of individualised materials, flexible learning time and a continuous feedback to the learner (Field & Drysdale, 1991).
- **CBE has a constructivist approach.** Griffioen (2002) uses the metaphor of the network of steel in reinforced concrete to emphasise that the constructivist paradigm together with the concepts of competence forms the backbone of CBE. Motschnig-Pitrik & Holzinger (2002) state in a succinct way: “In brief, the main goal of constructivism is competence, not knowledge as in cognitivism, or achievement as in behaviourism.” (p. 163). Statements aside, it is known that the quality of the acquired knowledge through active construction is better than passively gained knowledge.
• In CBE the role of the teacher is that of a ‘cognitive guide’. Teachers encourage students to engage in active inquiry and make explicit their tacit assumptions. “A constructivist teacher is more interested in uncovering meanings than in covering prescribed material.” (Kerka, 1997, p. 1).

• CBE has learning environments focused on the development of competencies. Disciplinary content is no longer the criterion for arranging the curriculum, but the competencies that should have been acquired and developed by the end of the education programme (Kirschner et al., 1997). In this sense one could speak of designing and developing the curriculum ‘backwards’, because the knowledge and skills are determined by the competencies that are needed by a competent professional and not by the disciplinary ‘body of knowledge’.

• CBE includes the development of generic competencies. Aspects are: generic competencies are integrated throughout the whole curriculum; CBE stimulates the transfer capacity; focus on innovations and problem solving and the explication (definition) of problems; self-reflection and self-assessment play a fundamental role.

• In CBE assessment focused on competencies. Aspects are: mainly assessment of competencies, rather than knowledge and skills; assessment is both formative and summative and forms an integral part of the process of the development of competencies.

• In CBE curriculum development is based on the elaboration of profiles and identification of competencies. Domain-specific knowledge and skills are determined by the competencies that are needed by a competent professional and not by the disciplinary ‘body of knowledge’.

In practice one might find educational programmes that are to a greater or lesser extent competence-based. Research on the practice of CBE in Belgian educational institutions, Dochy and Nickmans (2005) describe four categories of competence-based curricula that show an increasing degree of competence-based characteristics. Engaging in competence-based curriculum development requires conscious, more or less radical choices. At the same time it is clear that there is not one competence-based curriculum model that can be considered to be the standard.

CBE in Higher Education
When we consider the role that CBE might play in Higher Education institutions we have to look at the changing role of knowledge. Important developments in society in the past decades have led to a different view of knowledge, accompanied by an increased attention for the acquisition of competencies and competence-based education and training (Kearns, 2001). Aspects of a different
view of knowledge are:
• The classical concept of knowledge as school-based and discipline-based is broadened; knowledge is seen as an integrative capability. The acquisition of knowledge in itself is The major aim of education and training has shifted from only the acquisition of knowledge to acquisition and application of the right knowledge ‘just in place and just in time’.
• The development of knowledge is taking place in more diverse contexts. Gibbons (1998) speaks about two ‘modes’ of knowledge production. Mode 1 production refers to knowledge of the discipline-based type, typically produced in ‘classical’ universities. Mode 2 knowledge development is the production of knowledge in the context of application: it arises in the process of solving particular complex problems in collaborative trans-disciplinary teams and partnerships, situated both within and outside higher education institutions.

The role of universities in this mode of knowledge development has been ambiguous (Gonczi, 2001). In some cases universities want to put a strong emphasis on traditional, disciplinary knowledge production because timeless, universal knowledge is important in a world where everything is in flow. However, more and more the need is recognised for domain-specific competencies within the disciplines and trans-disciplinary, as well as generic, competencies (Teichler, 1998). Institutions of higher education in developing countries have mostly kept to the traditional functions and objectives of Western universities (Maamouri & Wagner, 2001), until long after these universities started to change. Delors (1996) states that up to ten years ago in many sub-Saharan African countries there was traditionally no formally codified knowledge and that know-how was based on implicit, tacit knowledge.

However, global developments in science, society and economy also affect the developing countries and their higher education institutions are closing the gap between ‘classical’ disciplinary knowledge and know-how required for the new job market. One answer on the demand for more relevant education has been a stronger focus on the world of work, and the attention for ‘core’, or personal transferable skills, such as the ability to co-operate, communicate, and solve problems (Bennett, Dunne & Carré, 1999).

Another result of the developments described above is that the difference between vocational and academic/general education is getting smaller, with increasingly active partnerships between higher education institutions and the worlds of industry, commerce and public service (Stern & Wagner, 1999; Hager & Hyland, 2003).
Critiques of CBE and its use in Higher Education

Competence-based higher education is not undisputed. One of the dangers that critics often mention is the minor role of disciplinary knowledge, together with a haphazard taking in of pieces of disciplinary knowledge by students. It is feared that students do not acquire the coherent view on the body of knowledge in their discipline necessary for an academic profession or the scientific endeavour.

It is clear that knowledge in CBE supports the development of competencies and that the acquisition of knowledge takes place in the context of (professional) application. However, CBE learning environments include learning assignments and learning practices. Without knowledge, the learning tasks cannot be performed, certainly not at academic level (cf. De Corte, 1996). What one knows determines what one sees and not the other way around (Kirschner et al., 1997). Everwijn et al. (1993) when writing on transfer emphasise that a rich knowledge base – which contrasts experts’ and novices’ performances – seems to be the real power behind good thinking within a domain-specific situation. Specific knowledge and skills are necessary to discover similarities and differences between old and new professional situations.

Barnett (1994) provides criticism of CBE from the viewpoint of the importance of knowledge and deep understanding in academic education. Developing deep understanding takes time. It implies a broad and firm base of disciplinary knowledge. In Barnett’s view, competence-based curricula lead to loosely coupled modules, blocks, and projects that undermine the quest for deep understanding. Although modularisation increases the responsibility and the opportunities for the students to determine their own learning paths, it also leads to fragmented learning experiences. The diminished importance of disciplinary knowledge is seen as a serious danger. Disciplines are considered the ‘social facts of academic life’.

Another related danger of the practice of CBE is that it is narrowed down to the acquisition of thinking styles, attitudes and schemes for problem solving related to a specific profession (Wendrich et al., 2005). Scientific knowledge shifts to the background and is subordinate to what is need for solving realistic professional problems. There seems to be no role for reflection on the theory and the relevance of theoretical insights for the professional ‘in action’. Perrenoud (1999) speaks, in this context, about creating a new proletariat.

Two more criticisms on CBE that are often voiced concern the behaviourist approach and the view that CBE is basically economically and therefore politically driven.
Too much behaviourism in CBE leads to an excessively reductionist, narrow, rigid, atomised approach (Macfarlane & Lomas, 1994). It ignores connections between tasks and attributes underlying performance (Kerka, 1998). In the political criticism CBE is seen as a means to satisfy employers’ needs for a skilled work force. Wendrich et al. (2005) speak of CBE as the potentially pedagogical condensation of human capital theory, cognitivism/constructivism and neotaylorism.

**Implementation Challenges for CBE**

Regarding the implementation of the intended curriculum it is extremely important that intended learning outcomes (competencies), teaching & learning approaches and assessment are aligned. There are various threats to this proper alignment. University rules and regulations may prohibit innovative approaches, for example, to assessment. Accreditation Boards may demand strict adherence to a traditional approach. Reforming a curriculum towards a more competence-based approach implies more autonomy for the educational institution offering the educational programmes. This may conflict with existing bodies that are in favour of a centralistic approach, for example through central examinations. New ways of teaching and learning, creating rich learning environments, designing new forms of (authentic) assessment also require intensive training and coaching of academic staff and a continuously applied monitoring and evaluation of the curriculum in action.

One way of dealing with the pitfalls of superficial learning through CBE in Higher Education has been a focus on the question what makes education ‘academic’ or what academic competencies students should acquire in higher education programmes. In the competence-based education of academic professionals in the Netherlands, including researchers, the acquisition and development of academic competencies has a central role in the undergraduate curriculum. For example, three technical universities and one ‘general’ university have formulated seven academic competencies (Meijers et al., 2005). Three are related to the domain/discipline and include being competent in one or more scientific disciplines (refers to existing knowledge), and being competent in doing research and designing (related to knew knowledge and artefacts). Three academic competencies related to ‘methods’ and include the scientific approach (specific for the natural sciences), basic intellectual skills and competence in co-operating and communicating. The relation with the context is formulated in the seventh competency in taking into account the temporary and societal context.
Some academic programmes, such as the academic teacher education programmes are fully based on the formulation of core competencies, including the underlying attributes in terms of knowledge, skills and attitudes. In the design of learning environments meaningful, authentic contexts are essential. As far as teaching and learning methods are concerned, in CBE various approaches can be found: problem based learning, project based education, case based learning, and dual learning with internships in the world of work.

Through a system of guidance, coaching and formative assessment, students are increasingly directing their own learning process. The challenge for the lecturers is to integrate the development of meta-cognition of students in their educational activities. Through reflection and developing self-knowledge student should gain insight into their own learning processes. The teacher in competence-based (higher) education is more the ‘guide on the side’ than ‘sage on the stage’.

So, CBE in Higher Education should include more generic competencies (core skills, key competencies, essential skills, foundation skills). Emphasis should be put on teaching and learning activities and in assessment on the “...general ability to learn and apply competencies in many different aspects of a person’s activities” (Fleming, 1993). Provided the acquisition and development of competence imply a growing ability to choose, develop and adapt abilities to address new situations in a creative, innovative research-like way, CBE will better respond to the demands of daily practice than knowledge-driven traditional models of professional training (Diwakar, 2002). Best seems the broad holistic view (also called integrated or relational); competence is seen as a complex combination of knowledge, attitudes, skills and values displayed in the context of task performance. In this view there is no trained behaviour, but thoughtful capabilities and a developmental process.

CBE and curriculum development
In the previous sections the conceptualisation of competence and implementation challenges have been discussed. The focus in this section is on the development of a competence-based curriculum. Some reference, although briefly, is made to curriculum development components, development strategies, and the positioning of competence-based curriculum development.

Curriculum development, revision or renewal is often limited to a revision of content, the knowledge that can be found in the standard books of the discipline. However, real curriculum development is a delicate process, involving all elements that form the ‘plan for learning’. Van den Akker (2003) mentions ten components that, like the spokes in a spider web are interrelated: rationale, aims
and objectives, assessment, content, learning activities, teacher role, materials & resources, grouping, location, and time. Changing one component will affect the others to some extent.

As far as the curriculum development process is concerned, an illustrative description is given by Marsh and Willis (2003). Various pressures for change and innovation lead to a phase of preparing, planning and designing the curriculum. In this phase (state of the art) theories and models and contextual factors play a role. Further curriculum development activities lead to the production of a curriculum package that, through dissemination activities and subjected to a certain diffusion, is finally adopted and implemented. The implementation is monitored and evaluated after which (sometimes in various rounds of re-design and development) the curriculum may be institutionalised until new pressures for change and innovation start the whole process again.

The design and development methodology, also called the technical-professional perspective (Goodlad, 1994) often follows a systematic, linear path. An illustration is the Systematic Curriculum and Instructional Development (SCID) model (Norton, 1996) in which the famous acronym ADDIE (Analysis, Design, Development, Implementation, Evaluation) can be found.

In the development of a competence-based curriculum a sequence is followed involving the formulation of a professional profile with key occupational tasks, followed by graduate profile with (selected) core competencies that relate directly to the professional profile. In the curriculum profile the final attainment levels of the graduate are defined in competence standards for both domain-specific and generic competencies. In teaching and learning methods and assessment knowledge, skills and attitudes/traits are integrated as much as possible. A model for competence-based curriculum development is given in figure 1.
Competence-based Curriculum development in African Higher Education

The reshaping of higher education with a more professional orientation is not a phenomenon restricted to Western universities, although there is not much literature yet on competence-based higher education in developing countries. Nevertheless, there are design and development projects going on in various countries, often in the context of international cooperation programmes.

*Figure 1: The relation between competence, core competencies and constituting (domain-specific and generic) competencies (Kouwenhoven, 2003)*
Mulder (2008), in answer on the question what promise CBE has for Africa, stated

“In my opinion, the same as in other countries: a more relevant curriculum graduates who are better prepared, professionals who are adding more value to development, and university, college and training programs which are more satisfying for students, teachers and potential employers.”

Since the context plays an important role in taking decisions in the curriculum development process, blended approaches are often used. These approaches may be observed and evaluated from a technical-professional point of view (how it is done) and a socio-political view (by who and for whom it is done). See, for example the typology of four (educational) design and development paradigms by Visscher-Voerman, Gustafson and Plomp (1999). The typology helps a Dutch curriculum expert reflect on their role in advising African partners to develop competence-based curricula. When and how to intervene is a question that constantly needs to be addressed in a curriculum development project. The author mostly worked in the communicative and the artistic paradigms. The communicative paradigm, or consensus approach, is characterised by working towards a shared frame of reference and reaching consensus among all stakeholders about what should be addressed through the curriculum and how this will be done. In the artistic paradigm, or connoisseurship approach, the designer, through formal and informal evaluation, gets a perception of the “situation”. The interpretation and understanding of the situation leads then to (design and development) actions. The designer, having a great eye for the context, intervenes in an artistic and creative way.

As an illustration of the above a personal account is given of post-graduate curriculum development in Mozambique, Ghana and Ethiopia. The three cases concerned new Masters programmes which were designed to various degrees through a competence-based approach.

**Case 1: Mozambique**

In 1999 the Eduardo Mondlane University (UEM) in Maputo, Mozambique, decided to reopen its Faculty of Education that had been closed for 14 years. An ‘installation commission’ coordinated a process to design and develop curricula for one undergraduate and three post-graduate programmes. This project was accompanied by experts from three Dutch universities in the context of Dutch development aid to higher education institutions. At the same time, a university-wide curriculum revision process had started to make the curricula more relevant to the Mozambican society, a sign of the decreasing gap between general (academic) and vocational education. The installation commission
for the new education faculty decided to embark on the road toward CBE in the faculty. The author was a member of the installation commission and decided to start a research project on the whole process (Kouwenhoven, 2003), becoming the ‘designer-researcher’ in the project. His design activities, with input from a curriculum expert of the Dutch Twente University and from various stakeholders, led to the formulation of a number of elements of the intended competence-based curriculum.

The process started by securing the views of professional bodies in Mozambique. The four main questions were:

• Are the options chosen for the educational programmes (undergraduate programme in psychology, post-graduate programmes in adult education, science & mathematics education, and curriculum & instruction development) supported by the professional bodies?
• What professional profiles can be described for the programmes? The resulting profiles formed the basis for the formulation of graduate profiles
• What (generic) competencies should be developed in the educational programmes?
• What input could the professional bodies give to methodological and logistical aspects of the curriculum?

Using this feedback (which was positive on a CBE approach), the design and development process led to a curriculum document and the description of some courses in the common core programme for the three post-graduate programmes. The designer-researcher and four external curriculum experts evaluated the formal curriculum on its competence-based characteristics. It was concluded that the graduate profiles and descriptions of domain-specific and generic competencies matched the outcomes of the professional survey. The curriculum document contained guidelines for the development of competence-based learning environments and recommendations for formative assessment through a student portfolio. However, it was not always clear how the subject-specific content related to the graduate profiles. Integration of content, especially in the common core programme was not visible. Another concern was that the integration of generic competencies into the various courses was not sufficiently worked out. It was also observed that more study and reflection was needed on the role of subject knowledge in competence-based programmes as well as the importance of institutionalised contacts with professional practice in the Mozambican context.

Later, analysis of the early implementation of the common core of the Masters programme showed a promising start from a competence-based perspective. At
times both foreign and local staff struggled with the new approach. For example, a concrete strategy to increase the autonomy of students was lacking. Staff found it hard to reflect on their educational practices and to guide and coach students towards self-reflection and self-direction. However, results of interviews with students and course evaluations show that students recognised the impact of the approach on their work and improvement in their generic competencies. Students also showed a sound comprehension of the concepts of competence and CBE. A few years after the implementation of the competence-based curricula, further monitoring was undertaken in the area of generic competencies through a formative evaluation exercise (Van der Linden & Mendonça, 2006). This showed that a competence-based approach had been sustained, although explicit attention for the development of generic competencies was still missing.

**Case 2: Ghana**

In Ghana, the Institute for Educational Administration and Planning (IEPA) at the University of Cape Coast is assisted by the author in the design and development of a new Masters programme in management in tertiary education. The need was felt for a more practice-oriented programme while acknowledging that the MPhil programme would require a substantial academic (research) input. A decision was taken to design and develop a competence-based programme with all the staff of the small institute (nine in total), having the additional purpose of equipping the IEPA staff with knowledge and skills in curriculum development.

Nine workshops covering curriculum development and CBE were applied to elements of the new curriculum. Various examples of competence-based management education programmes served to illustrate possible routes to take. The curriculum development process started along the ‘royal track’ mentioned previously, indicated by the following steps:

- **Formulation of a professional profile.** It was decided to concentrate first on a programme for middle-managers of polytechnics (deans and heads of department). A list was composed of 16 key tasks, subdivided into a total of 74 sub-tasks. This list was submitted for validation to heads of department of the ten polytechnics in Ghana. As a result some tasks were rearranged and reformulated.

- **Formulation of graduate profile.** The list of 16 core competencies related to the 16 key tasks was compressed to a graduate profile with 9 core competencies. These core competencies could be seen as the intend learning outcomes of the Masters programme and describe the competence of a graduate as an academically acting head of department in a polytechnic with a strong research attitude towards her/his professional behaviour. Because of the importance of research the ability to carry out and to promote
research was added as a tenth core competency. The core competencies can be found in Table 1.

- Elaborating competency descriptions. The ten core competencies were elaborated in terms of a description of the competency, outcomes of the behaviour that requires the competency, and some characteristic situations in which the competency would be used.
- Formulation of competence components to be addressed by the new curriculum. Knowledge and skills linked to core competencies were listed. Attitudes were combined with personal traits and listed for all key competencies together. The question what traits and motives does a HoD need to have in order to be a competent professional is important, because it asks to discuss whether an educational leader should have a certain personality. As stated before in this chapter required/competent/’up-to-standard’ behaviour results from the use of necessary competencies, and is co-directed by personal qualities. The knowledge items that were formulated based on the ten core competencies could be condensed to 6 themes. These themes could then again be related to key competencies as shown in Table 1.

### Table 1: Themes and core competencies

<table>
<thead>
<tr>
<th>Themes</th>
<th>Core competencies</th>
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<tbody>
<tr>
<td>Instructional leadership</td>
<td>Curriculum development and implementation</td>
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<td>Leadership in educational</td>
<td>Planning and implementing departmental/faculty</td>
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<td>institutions</td>
<td>development</td>
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<td>Supervisory leadership</td>
<td>Evaluating and supervising staff and student performance,</td>
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<td></td>
<td>Maintaining student and staff discipline</td>
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<td></td>
<td>Monitoring staff and student activities</td>
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<td>Leadership and management in</td>
<td>Providing community and outreach services</td>
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<td>extramural relations</td>
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<tr>
<td>Administration management</td>
<td>Managing human resources</td>
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<td>&amp; leadership</td>
<td>Managing records</td>
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<tr>
<td></td>
<td>Managing physical resources</td>
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<tr>
<td>Leadership in research</td>
<td>Research</td>
</tr>
</tbody>
</table>
• Generic skills were grouped into the following generic competencies:
  • Problem solving skills
  • Communication
  • ICT skills
  • Human relations (rephrased to ‘Interpersonal skills’)
  • Leadership skills
  • Critical/analytical thinking
  • Learning to learn (meta-cognitive skill)
  • Self-reflection (meta-cognitive skill)
• The curriculum structure was designed and further shaped with courses. It was decided to start with a part-time programme, consisting of 6 semesters. Each of the first three semesters has two blocks. In a block two courses are given in a face-to-face period of four weeks, followed by four weeks where students apply knowledge, practice skills and work further on their competence development. So, there will be in total 12 courses, given in 6 blocks in 3 semesters. The remaining semesters are used for the research project, leading to the Masters thesis. Apart from the 12 courses two “learning lines” have been designed, running throughout the first three semesters. They are dealing with research and with personal development. In general 30 hours in a block will be devoted to course work and 10 hours to activities in the learning lines.
• Guidelines for assessment and for creating rich learning environments were formulated. IEPA staff has been engaged in further developing the courses and producing course outlines.

In this project the author was not acting as designer-researcher as in the Mozambique project. Although outcomes of the design and development process were validated by stakeholders and external experts, the IEPA staff themselves determined what form and content the new curriculum will have. This guaranteed ownership by the staff could reduce the distance between intended and enacted curriculum.

After more than two years work the curriculum development process has almost been completed. A curriculum document is in its final stage and will soon be offered for approval to the relevant authorities in- and outside the university.

Case 3: Ethiopia
In Ethiopia, two new Masters programmes have been designed, one in teaching and learning in higher education, the other in higher education management and policy. In these cases the competence-based approach was introduced at a later stage when the content of courses had already been established. Although the Ethiopian curriculum developers appreciated the competence-based approach
since they wanted more practice-oriented programmes, it proved much more
difficult to develop internally consistent programmes. It remains to be seen
whether joining the ‘royal track’ along the way produces a sustainable CBE
approach.

An additional challenge to the developers of this curriculum was that it was
a blended programme; that is, a combination of face-to-face and distance
education. Since part of the programme was at a distance in their own work
place, the various courses were placed in a digital course management system
called Moodle. This is an open source system to manage courses and facilitate
communicating between lecturers and students.

One of the courses from the Masters programme ‘teaching and learning in higher
education’ will be presented in part as an example. Some comments will be
given on the competence-based characteristics of the course, with suggestions
to improve its competence-based character. It concerns the course ‘research in
higher education’. The Moodle site contains a course overview, followed by 6
topics outlining various stages of a research project. The course overview starts
with a welcoming message containing links to overviews of the course structure
and content in a ‘delivery plan’ and a ‘course outline’. Part of the delivery plan
is shown in Table 2.

*Table 2: Part of a course delivery plan*

<table>
<thead>
<tr>
<th>Week</th>
<th>Mode of delivery</th>
<th>Contents to be covered</th>
<th>Activities</th>
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<tbody>
<tr>
<td></td>
<td>Week 6 and 7</td>
<td>Topic 3: Research Design</td>
<td>Independent study</td>
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<td></td>
<td>(10 days)</td>
<td></td>
<td>Reading</td>
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<td></td>
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<td>Studying</td>
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<td></td>
<td></td>
<td>Doing activities</td>
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<td></td>
<td></td>
<td></td>
<td>Doing assignment #3</td>
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<td></td>
<td>End of week 7</td>
<td></td>
<td>Providing feedback for assignment #2</td>
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<td></td>
<td></td>
<td></td>
<td>Online support</td>
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<tr>
<td>8 -10 (15 days)</td>
<td>Distance</td>
<td>Topic 4: Research</td>
<td>Independent study</td>
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<td></td>
<td></td>
<td></td>
<td>Reading</td>
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<td>Doing activities</td>
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<td>Doing assignm. #4</td>
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<td></td>
<td>End of week 10</td>
<td></td>
<td>Providing feedback for assignment #3</td>
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<td></td>
<td></td>
<td>Online support</td>
</tr>
</tbody>
</table>

Chapter 7
The welcoming message is followed by the course rationale and the competencies. Two competency descriptions are given in Table 3.

**Table 3**: Some competency descriptions for the course ‘research in higher education’.

<table>
<thead>
<tr>
<th>Competency description</th>
<th>Knowledge</th>
<th>Skills</th>
<th>Attitude</th>
<th>Performance indicators and criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem identification: a competent educational researcher can identify and state researchable problems</td>
<td>Characteristics of research problems How to state research problems</td>
<td>Formulating a researchable problem</td>
<td>Curiosity to find the truth behind a phenomenon Appreciate educational research as a systematic way to deal with (educational) problems</td>
<td>At least 3 reported original (real) researchable educational problems Satisfactory analysis and presentation of weaknesses and strengths of problem statements in selected research articles</td>
</tr>
<tr>
<td>Designing research/ selecting research approaches: a competent educational researcher can select an appropriate research approach or design</td>
<td>The nature of quantitative and qualitative designs Characteristics of mixed method designs Types of applied research (action, design and evaluation research)</td>
<td>Selecting a research design that is appropriate for addressing the research problem</td>
<td>Appreciate without bias the strength &amp; weakness of various research approaches.</td>
<td>Identified</td>
</tr>
</tbody>
</table>

After a face-to-face week during which the course is introduced, students study various topics in a distance mode. As can be seen in Table 2, the pattern is repetitive; it is expected that students study independently and then complete an
In this course, students go step-by-step through the research process by carrying out a mini research project. This ‘learning while doing’ is one of the characteristics of a competence-based approach. Research should become a regular experience in the life of the student by introducing a continuous research line throughout the programme. Each course or module could emphasize a different part of the research process through small assignments.

Fellow students (peers) could also play a role in developing research competencies. Small research groups of three or four students discuss problems, give feedback to members research and reflect together on their learning.

Some observations and recommendations
Lessons from the three cases presented above include:
• Following the royal track’ from the start is more likely to produce CBE programmes that are academically sound and valuable for the professional practice.
• In addition to a new curriculum, staff involved in the development process also acquire curriculum development competencies.
• Learning to develop a curriculum is much more than gaining experience and acquiring the knowledge needed. To become a competent developer attributes such as continuous reflection, feedback and ‘deliberation’ are required in the tradition of Vygotski’s social constructivism.
• While obvious from the above, it needs to be stressed that competence-based curriculum development takes a great deal of time. Developers have to walk the whole ‘royal track’, starting with the time-consuming professional survey, and sometimes taking backward steps to develop an internally consistent and ‘acceptable’ curriculum.
• Inevitably the facilitator/external expert is confronted with the question of how often and how much to intervene. This relates to the question of

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Develop a research design for the problem you selected in assignment # 1.

Criteria for assessment
1. Appropriateness of the design to the problem.
2. Justification given for selecting the research design.
3. Clarity of description of the design

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ownership. When does the curriculum development process cease to be a common journey, particularly when there is the pressure of time and it is much easier for the expert to write the curriculum on their own. Continuous reflection, preferably with colleague experts, and asking feedback from the stakeholders could contribute to a solid base for decisions on when and how to intervene.

- The more a new curriculum deviates from an old one, the more training of the teaching staff is required. This is often neglected in curriculum renewal. When time is at a premium, it is often devoted to creating a written curriculum document for approval. There is no time left to train and coach staff in the implementation of the new curriculum, so that 'old wine is offered from new skins' and an innovative programme fails to be implemented.

Conclusion
Competence-based education can be an answer to the call for more practice-oriented education. Particularly in developing countries, graduates need to be prepared for the world of work so they can function in a range of professions. A new competence-based curriculum requires consensus between the developers on a number of related concepts (e.g. competence, authentic assessment, constructivist approaches in teaching and learning) and aspects (e.g. the role of knowledge, the acquisition and development of generic competencies, the changing roles of teachers and students).

The experiences in three African countries show that it is possible to develop and implement competence-based curricula in a higher education context. However, more research is needed on the effectiveness of CBE and particularly whether such innovations are sustainable when external project funding comes to an end.

References


