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AN INVENTORY FOR SELF-ASSESSMENT OF TEACHING COMPETENCES AS FOUNDATION FOR FACULTY DEVELOPMENT TRAINING

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Abstract

Traditionally, a university professor qualifies through achievements in research. However, presently, at the age of mass-higher education, teaching competences become more and more important for the success of a university study programme. It is recognized that the professors are at the heart of the curriculum. In particular when a school wants to change to a new pedagogical methods the skills and commitment of the teaching staff are essential.

In order to set up a programme for training pedagogical competences of teachers in higher education it is necessary to assess the present level of competences.

Based on experiences with the development of several faculty development programmes an instrument has been developed allowing professors to list their relevant teaching training and to assess their own teaching competences. As the instrument is based on the same grid as that of a teaching portfolio, filling in the instrument could be seen as a first step in developing such a teaching portfolio. The presentation will describe the characteristics of the instrument and discuss how it can be used in the development of a didactic competences training programme.

Keywords: faculty development; teaching competences; teaching portfolio

Resumen

Tradicionalmente, un profesor de universidad se califica por logros en la investigación. Sin embargo, actualmente, en la edad de enseñanza superior de masas, enseñando la competencia se hacen cada vez más importantes para el éxito de un programa de estudio de universidad. Es reconocido que los profesores están en el corazón del plan de estudios. En particular cuando una escuela quiere cambiarse a unos nuevos métodos pedagógicos las habilidades y el compromiso del personal de enseñanza son esenciales.

A fin de establecer un programa para entrenar la competencia pedagógica de profesores en la enseñanza superior es necesario tasar el nivel presente de la competencia.

Basado en experiencias con el desarrollo de varios programas de desarrollo de facultad un instrumento ha sido desarrollado permitiendo a profesores poner su formación de enseñanza relevante en una lista y tasar su propio competencia de enseñanza. Cuando el instrumento está basado en la misma rejilla que aquella de una carpeta que da clases, rellenando el instrumento podría ser visto como un primer paso en el desarrollo de una carpeta que da clases tanto. La presentación describirá las características del instrumento y hablará como puede ser usado en el desarrollo de un programa de formación de competencia didáctico.

***Palabras clave**: desarrollo de la facultad; competencias de enseñanza; enseñanza portfolio*

1. Introduction

Presently, a professor at a university of technology has a job that requires various competencies: first as a researcher, second as an engineer and third as a teacher. However, traditionally a university professor qualifies through achievements in research only. Competences in the two other important areas remain unchallenged. Sometimes there is a complaint that our students cannot learn directly from the best engineers, because the universities cannot afford to hire them. The more serious problem, however, is the lacking of teaching skills. Because the universities often do not encourage teaching performance, this is problem is reinforced by a lack of motivation to excel in teaching.

In the old days, when the number of students was small and university study was a privilege of the upper class, teaching skills were not very important for a university professor. Students elected to work with a professor because of his expertise in a particular topic. So at that time research and publications of the professor were really the starting point for the teaching and learning.

During the 20th century we have witnessed a continuous increase in the number of students in universities. Presently, this development continues with the objective stated by the European ministers of education in Lisbon in 2007, that more than half of the population in the EU countries should follow 'higher education'.

As a consequence of the increasing number of student the old individualized teaching model has become obsolete. In most European universities a freshman class nowadays consists of several hundreds of students. Evidently, didactic skills play a different and more important role in such a large class than it did in the old model of private tutoring. Universities have to support students to acquire new knowledge and higher order cognitive skills to enable them to adapt to new contexts and pursue learning, whatever the conditions (Prosser & Trigwell, 1999).

2. Teacher training in higher education

Presently, the importance of teaching competence is recognized more and more often. Universities need to produce output and can no longer accept the high dropout rates that are common in engineering education (Van den Bogaard, 2012). As common sense tells us that Good learning depends on good teaching (Biggs, 1999), we need to work on improving the teaching skills.

Teaching competences include the ability to capture the attention in a classic lecture, but also knowing how to use new educational technologies. Also, teachers in higher education will have to learn to deal with new educational methods, which put a higher emphasis on the student's ability to direct their own learning process, like problem based learning (PBL), experiential learning and project organized learning (De Graaff & Kolmos, 2003). This means they have to acquire competencies related to new teacher roles, like case author, facilitator, course designer, expert consultant, etc. Even more importantly, they need to reflect on their professional identity.

Implementation of a faculty development programme presupposes an institutional culture where teaching activities are considered important. Academic leaders play a prominent role in this sense. Several authors stress the importance of institutional recognition of the quality and value of teaching in higher education by academic leaders at all levels (Wright, 1995; Knight & Trowler, 2001). Institutional policies and practices regarding teaching have to be fully supported by academic leaders from the lowest to the highest level. Demonstrating institutional commitment can take many forms from providing financial support to the organisation special events, initiating pilot programs, opening workshops and handing out a certificate for demonstrated teaching competencies at the end of programs (De Graaff et al, 2006).

The certificate for teaching competences could be used as a condition for promotion in the ranks of scientific staff, or other types of reward. A qualification programme should include restructuring the teachers' knowledge, teachers' practice and the production of validated knowledge on teaching and learning. (Tillema & Imants, 1995).

3. A teaching portfolio as foundation for a teacher-training program

Teaching competence is construct that is hard to measure. As a complex skill it can certainly not be measured by means of a paper-and-pencil test. Observation of performance in the classroom seems to be most appropriate. However, it will be terribly time consuming to gather a representative sample of teaching behaviour for each teacher. In many cases data on teaching are collected by means of student satisfaction questionnaires. Even if these data are very useful, they cannot be applied directly to assess teaching competence. In short, there are a lot of data available, but it is difficult to process them into individual scores.

As an alternative approach to measuring teaching competences the teaching portfolio is proposed (Seldin,1997; Quinlan, 2002). In a teaching portfolio the teacher presents data on his/her own teaching competences. A portfolio is nothing more or nothing less than a folder. An analogy to clarify this function is the portfolio used by graphic artists to carry around a sample of their work, so that they can convince potential customers of their competence. Similarly, a teaching portfolio contains materials that testify the competences of someone as a teacher. Just like the artist makes a selection from his work, displaying his/her ability to work with a variety of topics and techniques, like portraits and landscapes, in oil, crayon and charcoal, the teacher assembles a selection of materials testifying to his/her teaching competence.

4. The TU Delft teaching portfolio based on a matrix of teaching competencies

Following the outline of the portfolio format that was developed at TU Delft (de Graaff et al, 2006), the basic structure for the teaching portfolio should consist of 5 sections:

A. General introduction
B. Teaching Philosophy
C. Main body: Teaching experience
D. Reflection on teaching competencies and Personal Development Plan
E. Appendices

The teaching experience section identifies different teaching formats, like:

1. Projects and PBL
2. Practice assignments
3. Lectures
4. On-line education
5. Individual assignments

Within each of these teaching formats the portfolio identifies competences in the following areas, resulting in a matrix of teaching competences (see Appendix 1) (de Graaff et al, 2006):

I. Design and development
II. Preparation and delivery
III. Assessment and evaluation
IV. Educational Management.

A third dimension is added to the teaching competences matrix, by differentiating the following three aspects within each cell:

– Facts
– Evaluation
– Reflection

To give an example, this means with respect to the format 'Lecturing' and the area 'Preparing and delivering', a teacher will first have to provide general data on the course like subject, number of students, section of the curriculum, etc. Than in the facts section a series of power point slides developed for the course could be presented. Next the teacher will have to provide an evaluation, using data from external sources (comments from colleagues or students). The final and most critical section is the reflection. Here the teacher is supposed to analyse the effectiveness of the teaching activity focussing on his own role as a teacher.

A complete portfolio contains materials for each of these teaching formats. However, as the level of experience may vary from one type of teaching to the next, most of the times the character of the portfolio will be different for different elements. When the experience is relatively limited the portfolio displays the present "state of the art" indicating a plan for further development. This system allows the school to set specific targets for teachers, like you need to cover at least three of the five competence areas.

5. Development of the checklist didactic competences

A clear disadvantage of the teaching portfolio as an instrument to assess teaching competences is that it is very time consuming to assemble a comprehensive teaching portfolio. In particular for experienced teachers it may be very difficult or even impossible to collect evaluation data on older courses. Moreover, it takes a lot of time to grasp the meaning of the concept of reflection on teaching competences. In order to save time and to provide a clear structure for experiences teachers the Educational Resumé and the checklist didactic competences have been developed (see Appendix 2).

The form and the checklist can be used as a shortcut to constructing a portfolio. The questionnaire provides sufficient information for an initial assessment of teaching competences. Following an inventory of the main factual data the checklist follows the structure of the Matrix asking for a self-assessment of teaching competences. The instruments can be used in various ways.

Based on the information from the Educational Resumé an assessor could decide on certification of experienced teachers. For young teachers at the start of their career it could help to set up their first Personal Development Plan, aiming to expand their teaching competences systematically. As the structure is similar, filling in the Educational Resumé is a good way to start preparing your first teaching portfolio.

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Matrix of educational competences

Stage \ format	1. Projects and PBL	2. Practice assignments	3. Lectures	4. On-line education	5. Individual assignments
A. Design and development ... is able to formulate adequate learning objectives	A.1. ... is able to construct a project assignment ... is able to write a student guide for the project	A.2 ... is able to develop a practice assignments ... is able to write a student guide	A.3. ... is able to develop a plan for lecture course ... is able to write a student guide	A.4. ... is able to develop an online learning environment, including a digital a student guide	A.5. ... is able to make a plan for supervision of an individual project
B. Preparation and delivery ... is able to interact with students effectively ... is able to teach a course in English ... is able to produce study materials in the English language	B.1. ... is able to act as a facilitator to groups of students working on a project and to ... is able to give effective feedback	B.2. ... is able to organise and supervise a practice assignment	B.3. ... is able to prepare and run a lecture course, including the preparation of presentation slides and home work assignments	B.4. ... is able to manage an online learning environment, including interaction and feedback	B.5. ... is able to give effective feedback on the performance on an individual project
C. Assessment and evaluation ... is able to motivate the choice of an assessment format in relation to the learning objectives ... is able to construct an examination in the English language	C.1. ... is able to define the criteria for assessment of individual and group performance ... is able to assess individual learning outcomes for project work	C.2 ... is able to define the criteria for assessment of performance of a practice assignment ... is able to assess individual learning outcomes for a practice assignment	C.3 ... is able to define the desired learning outcomes ... is able to construct a test for the assessment of the learning outcomes	C.4 ... is able to construct and administer an online test for assessment of learning outcomes ... is able to set up online peer evaluation	C.5 ... is able to define the criteria for assessment of the performance on an individual project ... is able to assess learning outcomes for a an individual performance
D. Educational Management ... is able to direct others in the design, construction and delivery of an educational programme	D.1. ... is able to manage a project or semester programme	D.2 ... is able to manage practice components in the curriculum	D.3 ... is able to manage the contribution of different disciplines to the curriculum	D.4. ... is able to manage the integration of online learning in the programme	D.5. Is able to supervise and give feedback to other individual supervisors

Appendix 2. Educational Resume

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Educational Resumé

1. Personal data	
Name	
Year and date of birth (month-day-year)	00-00-0000
Date of completion of the form	00-00-0000
Discipline, graduated	
Highest degree	
Start of employment as professor	00-00-0000
Discipline teaching	
Teaching task in hours/week (last year)	

2. Educational tasks	never	sometimes	regularly
Course construction			
Lecturing and instruction			
Curriculum design			

3. Curriculum phase	hours/week
Bachelors programme	
Masters programme	

4. Educational formats	never	sometimes	regularly
Lecture large groups > 80			
Lecture medium groups >25 < 80			
Practice instruction			
Project facilitator (tutor)			
Individual supervision			
E-learning			
.....			

5. Courses on didactics and /or teaching in Higher education				
Course	Offered by	Short description	Study load	Year

6. Course you have been teaching during the past five years				
	Course	Discipline	Format	Study load
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

 1

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7. Checklist didactic competences: I am able to.....

Educational objectives	1 = not at all; 2 = nearly; 3 = sufficiently ; 4 = well ; 5 = very well
1. ... to formulate operational educational objectives for a course	1 - 2 - 3 - 4 - 5
2. ... to choose the correct educational format given a set of objectives	1 - 2 - 3 - 4 - 5
Projects and PBL	
3. ... to collaborate in the design of a project, including assignments and student guide	1 - 2 - 3 - 4 - 5
4. ... to act as a facilitator to groups of students working on a project, including giving effective feedback	1 - 2 - 3 - 4 - 5
5. ... to define the criteria for assessment of individual and group performance in project work	1 - 2 - 3 - 4 - 5
6. ... to assess individual learning outcomes for project work	
Practice Instruction	
7. ... to develop a practice assignments, including student guide	1 - 2 - 3 - 4 - 5
8. ... to organise and supervise a practice assignment	1 - 2 - 3 - 4 - 5
9. ... to define the criteria for assessment of performance of a practice assignment	1 - 2 - 3 - 4 - 5
10. ... to assess individual learning outcomes for a practice assignment	1 - 2 - 3 - 4 - 5
Lecturing	
11. ... to develop a plan for lecture course, including detailing the contents and the writing of a student guide	1 - 2 - 3 - 4 - 5
12. ... to prepare running develop a lecture course, including the preparation of presentation slides and home work assignments	1 - 2 - 3 - 4 - 5
13. ... to give a lecture course, including an interactive exchange with the students (questions and answers)	1 - 2 - 3 - 4 - 5
14. ... to construct a test to assess the individual learning	1 - 2 - 3 - 4 - 5
Individual supervision	
15. ... to make a plan for supervision of an individual project	1 - 2 - 3 - 4 - 5
16. ... to give feedback on the performance on an individual project	1 - 2 - 3 - 4 - 5
17. ... to define the criteria for assessment of the performance on an individual project	1 - 2 - 3 - 4 - 5
18. ... to assess learning outcomes for a an individual performance	1 - 2 - 3 - 4 - 5
E-learning	
19. ... to develop an online learning environment, including a digital a student guide	1 - 2 - 3 - 4 - 5
20. ... to manage an online learning environment, including interaction and feedback	1 - 2 - 3 - 4 - 5
21. ... to construct an online test for assessment of learning outcomes	
Assessment	
22. ... to motivate the choice for an assessment format in relation to the learning objectives	1 - 2 - 3 - 4 - 5
23. ... to construct items for a multiple choice-examination	
24. ... to construct open-ended questions, including an answer model	1 - 2 - 3 - 4 - 5
25. ... to conduct an oral examination	1 - 2 - 3 - 4 - 5
International education	
26. ... to teach in English	1 - 2 - 3 - 4 - 5
27. ... to produce study materials in the English language	1 - 2 - 3 - 4 - 5
28. ... to construct an examination in the English language	
Evaluation	
29. ... to report on the educational quality of a course or curriculum, including a plan for improvement of weak elements	1 - 2 - 3 - 4 - 5
30. ... to reflect on my own competencies as a teacher in all different facets (design, construction, delivering and management of education)	1 - 2 - 3 - 4 - 5

11. Additional comments:

- Use the back of the form or a separate sheet -