

# How to support generic and disciplinary aspects of teaching in higher education

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## Introduction

The question whether centers for staff and educational development in higher education should focus not just on generic aspects but also on disciplinary aspects, presupposes the very existence of such centers. As a matter of fact, such centers have established themselves in many countries only fairly recently. For a long time, a PhD, publications in peer reviewed journals and other research credentials were the prime and often only prerequisites for a teaching career in higher education. Academics who had these credentials were apparently seen as adequately equipped to prepare students for their future in the system.

Traditionally, teaching in higher education in many countries was also pedagogically rather undemanding and did not require much teaching support. Lectures dominated the scene, and anyone who could deliver a monologue of fifty minutes was 'Fit für die Lehre'. Whether or not these lectures helped students on their way was not the problem of the professor, since learning was the responsibility of the students. When learning outcomes were disappointing, professors shrugged their shoulders, exclaiming "I have covered the material, so I am not to blame".

These things have changed during the past few decades. Teaching has become more varied and demanding with the introduction of teaching formats such as project work or problem based learning; the increased numbers and heterogeneity of the students; and the pressures on valid, reliable and acceptable assessment procedures. Also, quality standards and a more professional attitude towards

teaching have developed. ‘Bologna’ stimulated this process further and led to European wide comparisons and exchange of good practices.

### **Towards professional standards for teaching in higher education**

Teaching in higher education used to be one of the last ‘non-professions’ in that the characteristics of true professions (think of architecture, law, medicine) are lacking. Professionals, according to a review by Grossman (2003) have a complex theoretical knowledge base derived from lengthy study and training (1), give authoritative instructions which clients follow even when they do not understand why these are good instructions (2); regulate the standards of practice and entry into the profession through autonomous professional bodies (3); and gain significant prestige, influence and financial rewards because of their occupation (4). In universities, this may hold true for research, but teaching has only just started to turn itself into a true profession. Even today, not many universities world wide have a selection, tenure track or staff assessment scheme in place that makes meeting certain teaching standards really inescapable for all academic staff.

“Every student has the right to be taught well”, was the successful slogan of the Staff and Educational Development Association (SEDA) in the United Kingdom in the nineties (Baume & Baume, 1996) to provoke the government to implement teaching standards in higher education (HE Academy, 2006). It is easy to stretch its rhetoric into “Every student has the right to be taught by competent teachers”,

and “Every academic has the right to be supported by high quality professional development with regard to teaching”. It is difficult for university top management to overtly deny this logic, so in order to satisfy politicians, tax payers and (potential) students, they at least verbally pay tribute to the importance of qualified staff and good quality teaching for the sake of student learning (Cuthbert, 2009). And, in a mature and competitive educational context, when all other strategies with regard to strengthening a university’s position are already in full swing, support for staff development may give an institution a small but important advantage.

### **Generic teaching standards**

From the point of view of a university or a ministry of education, it is understandable that standards for teaching are phrased in a generic way, to be able to address (and assess) all teachers in all faculties and institutions. As an example, to obtain the Teaching Certificate in Higher Education from Utrecht University in the Netherlands, candidates should give proof in a teaching portfolio of the following teaching qualities:

#### Designing modules

Candidates are able to design a module in such a way that it fits in with students’ background knowledge, the goals of the module, and the place of the module in the overall programme, as evidenced in:

- The choice of appropriate materials and educational formats for the acquisition of knowledge; and
- The choice of activities for the acquisition of skills, both subject-oriented and academic.

## Teaching

Candidates are able:

- To use a variety of relevant, motivating and educationally sound teaching methods (e.g., work group, seminar, independent study, lecture, practical, etc.) and teaching techniques (e.g., use of presentations, ICT, etc.), and are able to alternately take the roles of expert and coach;
- To encourage students to express themselves fluently in speech and in writing in the normal languages of instruction (Dutch and/or English) and to learn to analyse problems;
- To be approachable to individual students and to motivate them to independent study behaviour, and to help them structure this. In doing so, candidates may exploit the variety of strategies present for independent studying and learning;
- To supervise individual students (e.g., through tutoring);
- To supervise study assignments (e.g., Bachelor's thesis, research placement);
- To offer teaching in such a way that account is taken of the diversity among the students with regard to prior knowledge, aptitude, background and individual circumstances.

## Testing and evaluating teaching

Candidates are able:

- To make a well-considered choice from the various types of testing methods, and to ensure that the tests are a true reflection of the module and comprehensively test knowledge and skills. Candidates are also able to give feedback and to assess presentations, and, after consideration of the various

graded assignments contained in a student's portfolio, to arrive at a final assessment;

- To evaluate their own teaching (or arrange for it to be evaluated by a third party) and to modify it on the basis of such evaluation, or possibly as a result of new developments in the subject area.

Clearly, such standards create demand for relatively generic support on teaching principles such as active learning and student centred teaching; large group lecturing; small group tutoring; supervision of thesis writing or research; and assessment. Staff development centers from Sweden to Australia deliver roughly comparable modules on these topics.

### ***Pedagogical Content Knowledge***

However, an exclusive focus on generic pedagogical skills and competencies denies the influence of content on teaching and learning. In 1986, educational psychologist Lee Shulman, president of the American Educational Research Association, introduced the notion of Pedagogical Content Knowledge (PCK). PCK is closely related to what in continental Europe in, for example, the German language was already known as 'Fachdidaktik'. In the perception of Shulman, PCK is an amalgam of the two core dimensions of teaching, Content Knowledge and Pedagogical Knowledge. A good teacher has sufficient specific subject matter knowledge of his or her discipline and also possesses a repertoire of pedagogy and teaching skills. It is the appropriate application of these generic pedagogical approaches and tools to specific content and goals that results in

effective teaching, from the primary schools into the universities.

So, it would seem that university centres for staff development are well advised to pay attention to Pedagogical Content Knowledge, as the disciplinary specific perspective that adds value to the indispensable generic pedagogical skills. However, this is not without difficulties.

In the first place, there are as many PCKs as there are topics to teach. Solutions for difficulties that students experience with the principles of justice in a law course have little or no transfer value towards the teaching and learning of the sense-reason-act concept in robotics. For the individual teacher, developing the disciplinary ('fachdidaktische') aspects and pedagogical content knowledge related to teaching his or her topics is already quite complicated. For staff development centers, supporting pedagogical content knowledge formation is even more complicated, since disciplinary content knowledge is a prerequisite for this, and one cannot assume that staff developers possess content knowledge of all the disciplines that are taught in universities. In Germany, as well as in many other countries, many staff developers have a background in a social science (e.g., Pedagogy or Psychology), which is fine with respect to the generic pedagogical aspects but does not automatically convince teachers of engineering, medicine or languages that what they learn in the 'Hochschuldidaktikzentrum' is applicable to the specific subjects they teach. And there are more problems.

Even when a PCK is well documented, it still is notoriously difficult to transmit or develop, since teaching is extremely context dependent.

The Greek philosopher Heraklitos pointed out that one can never jump in the same river twice. Similarly, no one teacher can teach the same way twice, and no two teachers will ever teach the same thing identically. Teaching in practice is influenced by the personal characteristics and preferences of the teacher, the attitudes and capacities of the learners, and various factors that depend upon culture and organisation. For example, in Confucian societies like China, students show great respect for their teachers and would never contradict them or ask unsolicited questions. In contrast, in more individualistic countries like Germany or the Netherlands, questions and critical remarks are valued as a sign of initiative and independent thinking. Likewise, the unreflected 'export' and implementation of Western teaching formats that rely on the active collaboration of individuals, such as project work, to Viet Nam gives rise to much confusion (Phu'o'ng-Mai, 2008). Hence, Pedagogical Content Knowledge that proves to be highly effective in one class one day may utterly fail in the next class, in the next year or in another country.

### ***Supporting the development of pedagogical content knowledge***

So how to proceed from staff development centers that (just) help academic staff to improve their generic pedagogical skills towards contributing to disciplinary specific teaching and learning? Perhaps, the initiative should lie with the content specialists themselves.

The contribution to student learning outcomes of the generic courses offered by centers for staff development is important, but should not be overestimated (Van Keulen, 2009). Leadership, the institutional valuing of learning and teaching, the academic community, culture,

talents and time for preparation of the teaching staff, students' expectations, students' personal situation, infrastructure and support, curriculum and organisational quality are all factors to be taken into account. One of the key questions is whether or not a university's top management (i.c. the rector and the deans of the faculties) value teaching and are willing to support and invest in educational development in its broadest sense. Another key question is the involvement of teaching staff. Discipline specific educational development is not a matter of offering more, or better training modules. It is simply impossible to cover all relevant discipline specific student preconceptions and ways to overcome these. Instead, the disciplinary specialists should take the lead in the process of applying their generic pedagogical skills to the topics they teach. This requires high educational standards and commitment to teaching throughout a university.

### ***Utrecht University: An example of combining staff, educational and organisational development policies***

Utrecht University in the Netherlands is an example of a university that tries to excell not only in research but also in teaching. The university was founded in 1637, and is the now largest and most comprehensive university in the Netherlands, with about 30,000 students and 3,100 academic staff of whom about 600 are full professors.

Around 1990, Utrecht faced teaching quality problems in the form of poor ratings for teaching and was located at the bottom of national surveys. Uncommonly, there was a recognition that the standard of educational debate was low and that pedagogic expertise was in

short supply: "We were doing a lousy job at that time, we knew we could do better, and we decided to do it", said Rector Magnificus (Vice Chancellor) Willem Hendrik Gispen, reflecting on that period (Van Keulen, 2007). "It is our obligation not just to do research at the highest level but also to prepare the next generation of researchers as best as we can". Utrecht started planning major changes and much effort since has been focussed on raising the level of expertise and the quality of educational debate (cf. Gibbs, 2005).

In 1996 Utrecht University launched a teaching qualification scheme that obliged all faculty to meet basic pedagogic requirements in a portfolio assessment. The criteria are outlined above. All senior lecturers and full professors were required to meet the criteria of the Senior Teaching Qualification, which stresses the abilities for course and curriculum design, quality assurance and educational leadership.

In the first few years, objections were raised against the obligations as threatening academic freedom, hurting research, and being superfluous anyway, especially from members of staff with many years of teaching experience. Nowadays, complaining has been reduced to the (undeniable) fact that qualification and the preparation of a teaching portfolio takes time. Even full professors recruited from other institutions have to meet the requirements but this has come to be considered as normal practice in Utrecht and does not constrain recruitment. In the last decade, Utrecht University has consistently emerged on top of national surveys. Interestingly, relocating resources to teaching has not impaired research quality and quantity. International surveys (i.c. Shanghai Jiao Tong University, 2011)

locate Utrecht University in the top region of European Universities.

In 2000 the next step of Utrecht University in focussing educational leadership was starting an annual high prestige competitive entry programme ('Centre for Excellence in University Teaching') for middle level academics who want to move into positions of leadership of teaching. Candidates for this course are scouted and nominated by deans and directors of Schools and selected on the basis of motivation and educational leadership potential. The programme includes support for implementing an innovation (with an emphasis on how the innovations was brought about) and visits to other institutions internationally to see how they bring about change. Much current change across the university derives from the graduates of this programme. Many graduates have acquired influential positions and functions, such as director of bachelor or master programs or vice-dean for education, and are responsible for educational development initiatives.

In recent years, promotion to the rank of full professor in discipline specific education has been made possible for academics with an outstanding research reputation and who have a very substantive impact on the educational programs of their Faculty. Utrecht University now has about 25 'teaching professors'. This has lead to a distinctive scholarship of teaching and learning, in which discipline specific elements of teaching have become the locus of attention for educational research, especially in the domain of health (medicine, veterinary sciences, pharmaceutical sciences).

A fourth characteristic of the policies is a focus on research. Staff members of the Center for Teaching and Learning investigate the characteristics and impact of innovative educational approaches. The advanced level of educational expertise within the faculties and the positive attitude towards teaching allows for joint disciplinary specific research and development.

### **Clinical Lessons:**

#### ***An example of combining generic and disciplinary aspects***

A fine example is the recent PhD-thesis of Stefan Ramaekers (2011a). In a six-year collaboration between the Center for Teaching and Learning and the Faculty of Veterinary Science, the so-called 'Clinical Lessons' have been renewed and its characteristics and impact researched by a team of higher education specialists and veterinary experts.

The clinical lessons take up the larger part of the fourth year of the six-year bachelor and master program of Veterinary Science. They aim to provide students with initial experiences in solving authentic clinical problems, and to train them to reason and make decisions in clinical situations in accordance with the biomedical theories and the guidelines for practice which they have already studied. The lessons are intended to ease the transition into the clinical phase by raising the students' level of competence in clinical problem solving at the start of their clerkships. Furthermore, these lessons are intended to build on high levels of active student involvement and self-directed learning, and to enhance the students' awareness of standards of quality and professional conduct. The course design resulted from a

process of co-creation between the teaching staff and an educational consultant and trainer from the Center for Teaching and Learning. It was drafted based on views on the nature of clinical problems and situations, on reasoning with regard to clinical problems, and on the facilities and environments that are conducive to learning. These were grounded in prior experiences with clinical teaching formats and empirical results from studies about educational approaches such as case-based and problem based learning. Achieving a high level of teacher agreement and support for the course design's implementation was regarded to be an essential ingredient in the redesign process and this research on design issues.

Following the methodology of design research (cf. Van den Akker et al., 2006), relevant and representative clinical cases covering all major symptoms, diagnoses, treatments and prognoses within all relevant animals (i.c. horses, farm animals, pets, and some exotics) were developed and put into practice (Ramaekers et al., submitted). Staff members were trained to act as animal owners and help students to perform as veterinarians in an authentic setting. Intervention and feed-back styles were investigated with regard to educational impact (Ramaekers et al., 2011c). In order to investigate student learning outcomes a test was developed that allowed for taking clinical decisions in uncertainty (Ramaekers et al., 2010). The overall design and its impact was researched with a proof of concept study (Ramaekers et al., 2011b) and by triangulating the results from questionnaires, performance observations and assessment tests (Ramaekers et al., 2011d).

In this collaboration, 12 senior members of the teaching staff participated in clarifying the key principles for the clinical lessons.

33 staff members were trained to supervise the clinical lessons. 6 expert teachers took part in validating observational coding schemes. 28 expert veterinary practitioners from outside the university were involved in validating the test and the case descriptions. The knowledge of the teaching and learning process in clinical veterinary medicine has been greatly expanded.

### **Concluding remarks**

Staff development centers are important means in introducing teaching staff to generic pedagogic skills. Faculties, universities and ministries of education can and perhaps should elaborate on this by setting standards and by stimulating academic teaching staff to combine their newly acquired pedagogic skills with disciplinary specific knowledge into pedagogical content knowledge, through curriculum innovation, organizational development and educational research. For those universities that dare to invest the rewards are there: better curricula, dedicated staff, satisfied students, higher quality of learning outcomes, and a better reputation in the public eye (De Jong, Van Alst & Van Keulen, 2009).

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