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# Competence-Oriented Teaching and Learning in Higher Education – Essentials



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*Ulrike Hanke*

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## Preface

To collect the essentials of teaching in higher education in a short book for busy novice faculty is a challenging if not impossible task. There are no easy recipes for coping with the complexity of processes of teaching and learning. Still, we believe it is worth trying to point out the essential considerations that faculty in any subject and in any higher education context should keep in mind when they engage in teaching. If faculty manage to shift their focus away from their own “performance on stage” as a teacher to the effect their teaching has on the learning of individual students, they are on track.

For over 10 years at the Centre for Teaching and Learning in Higher Education at Zurich University of Teacher Education we have supported faculty coming from a wide variety of disciplines, mainly from Swiss universities of applied sciences, in reflecting and further developing their teaching. Although they keep telling us how unique their teaching context is, and while we are aware of the benefits of a discipline-specific approach to faculty development, we remain convinced that some of the issues affecting beginning faculty are surprisingly similar.

Various parts of the book address three essential competences necessary to further academics’ teaching approaches: the planning of a course or degree programme, the practice of active learning methods and the use of formative assessment, from a theoretical but also practical point of view. With this book, we also are looking forward to sharing and discussing experiences with colleagues teaching in other countries (e.g. in the context of various international collaborations).

Ultimately, we would like to support individual faculty in understanding their teaching as research; this means, investigating their teaching by starting to formulate hypotheses and possible questions about the effects of their respective interventions. Only with an evidence-based approach, focused on what works with an individual group of students, can faculty slowly but steadily develop effective approaches to teaching that match students’ needs in a particular context. In this sense, we encourage read-

ers to make a proof of concept of what is discussed in this book in their daily teaching practice and further develop their own strategies.

With best wishes for rewarding and effective learning processes for both you and your students.

Franziska Zellweger

Head of the Centre for Teaching and Learning at Zurich University of Teacher Education

## Introduction and structure of the book

### Essentials for teachers in higher education

It is a reality that academics in higher education are, apart from their teaching commitments, often active researchers. Additionally, many of them also work part-time in companies. Switching between these various roles has obvious advantages but often limits how much time academics can afford to spend on their teaching obligations. The situation is aggravated by the fact that traditional ways of teaching are being challenged today by the professional competences needed in the rapidly changing world of work. This publication takes these circumstances into account, at the same time offering orientation and guidance appropriate for contemporary higher education teaching and learning. The idea is not to present a comprehensive book with detailed guidelines for all kinds of teaching situations, but rather to offer a selection of topics that are considered the bare minimum for effective teaching and learning.

The following question captures the central idea of this book: what do novices who are experts in their professional field need in order to survive their first years of teaching in higher education? Reality shows that their focus of attention is often on technical expertise. They strive to become experts in their field of study and engage in research. Hopefully, during their career in higher education, they will place more and more emphasis on teaching.

This book makes an innovative contribution by consistently focusing on the essentials of teaching and learning and providing the best possible concrete and practical guidance for novices from different subject areas.

**The teaching strategies presented are designed to optimise student learning.** The book attempts to address faculty's repeated pleas for concrete tips and guidance, independent of a specific country or a specific higher education institution. This publication should be useful in higher



education teacher training and is especially designed to assist newly-appointed faculty to acquire the necessary skills and knowledge by themselves.

The curriculum for a Certificate of Advanced Studies in Higher Education Teaching in Switzerland serves as this book's point of departure. More than 500 academics from various disciplines have already been trained through this programme, including medical doctors, physiotherapists, lawyers, pedagogical specialists, environmental engineers, art college faculty, linguists and mathematicians. Their feedback confirmed the need for practice-related and science-based approaches and thereby helped to narrow down the scope of the book.

Tertiary-level teaching implies reflecting on what students should be capable of doing and knowing upon completion of their degrees. While teachers typically start thinking about how to formulate examinations and assignments for student assessment rather late in a module, students often want to know the assessment criteria at the start. Ultimately, what gets tested has a significant impact on directing both the students' attention and their learning behaviour during the semester. In practice, planning a learning programme is a circular process; in the end, coherence between learning outcomes, forms of assessment and teaching/learning methods is essential.

## **The book's structure**

Our current understanding of student-centred, competence-oriented higher education means that planning a teaching unit ideally begins by focussing on how to formulate the learning outcomes. It does not consider what a teacher has to offer, but rather considers which objectives are relevant for the students. In a second step, an adequate form of assessment is selected that will allow the teacher to determine the extent to which the students have achieved the formulated learning outcomes. Questions concerning the appropriate teaching method only arise as a third step. How can one support students in their development of know-

ledge, attitude and skills? Here, one should particularly keep an eye on recent psychological insights that acknowledge the unique ways in which individual students learn. In fact, this book mirrors the same sequence of steps as those recommended for planning a teaching unit.

The first chapter introduces current approaches to teaching and learning in higher education. It also describes the rationale and provides a framework for the topics that follow. The second chapter deals with defining learning outcomes for competence-oriented education. The third chapter highlights the importance of reducing the complexity and amount of content to be covered, both of which are closely linked to how the learning outcomes have been formulated. The fourth chapter describes forms of assessment and their implications for course design. The fifth and final chapter deals with the design of learning arrangements that will foster the much-debated shift from teaching to learning. In a knowledge-based society, lifelong learning is imperative. Consequently, competences such as self-directed and co-operative learning need to be incorporated into the teaching and learning process.

## **A focus on student learning**

A focus on student learning requires higher education teachers to have a basic understanding of the relevant learning theories. Each academic thereby becomes both a disciplinary expert and a learning expert. The more these teachers have to deal with teaching innovations and the pressure to use new media, the more important these insights become. In fact, high expectations that new media will bring about fundamental changes to student learning are almost sure to lead to disappointment. Despite the World Wide Web, e-learning, learning apps, software programs, MOOCs (massive open online courses), etc., the human brain, i.e. our hardware for thinking and memorising, has hardly changed on a multi-millennial time scale. Learning still happens via synapses in the brain and manifests itself in the brain's biology. German neurobiologist Manfred Spitzer used the image of a winter landscape to explain these

mental processes. A person who walks through snow leaves a trail. This trail has to be used frequently to prevent it disappearing after further snowfall. The same applies to learning. To maintain traces in the memory, one has to anchor the content by regularly using it. This is the only way to ensure that it does not disappear as new information is added.

Contrary to common opinion, the bottleneck to learning is the human memory system rather than the method of presentation. Learning means taking time to practice, relating different kinds of content to one another and then integrating and applying it to specific problems. This can be done more or less intelligently, but the limiting factors – time, the amount of learning material and its complexity – remain. The capacity of humans to absorb and process information has not significantly changed over thousands of years. Therefore, reduction of content remains a core challenge for teachers: what is worth learning and how long will it remain relevant? What can, and should, be left out? Above all, one must accept that, in some circumstances, what has been learned needs to be forgotten, so that one does not continue to use old routines instead of finding new ways. Everyone knows the problem when dealing with up-dated software: we habitually carry on with the same mouse movement although the relevant button has moved from left to right. In the context of constant innovation, the force of habit often makes us fail miserably.

*We are drowning in information, yet starving for knowledge.  
(Rutherford, D. Rogers, library board of directors, Yale, 1985)*

Only neuroenhancers, genetically modified humans or implanted computer chips could fundamentally change human learning patterns. Whether this is desirable, technically feasible or even inevitable is not a subject of the present or the immediate future in higher education.

This publication is the result of the editor's conviction that an academic who is equipped with the necessary awareness, knowledge and skills can – with reasonable effort – successfully deal with the challenges in higher education teaching today.

# 1 Higher education teaching redefined – the shift from teaching to learning

The following chapter gives a brief overview of current developments in society and at higher education institutions, with a view to their relevance in everyday teaching. The information presented explains the recent emergence of concepts like competences, standards, self-regulated learning, employability and the shift from teaching to learning in higher education.

## 1.1 Higher education teaching in view of the Bologna Process

The social significance of higher education has changed radically over the last few decades. Formerly elite institutions, accessible to only a few, have now become training centres for many. The opening up of higher education and increased mobility in a globalised world, have resulted in a marked increase in the heterogeneity of the student body. Changes in the workplace have resulted in an increasing demand for people with tertiary qualifications. Knowledge-intensive activities are replacing traditional

<p>WAYS OF THINKING</p> <ul style="list-style-type: none"><li>• creativity and innovation</li><li>• critical thinking, problem-solving, decision-making</li><li>• learning to learn/metacognition</li></ul>	<p>TOOLS FOR WORKING</p> <ul style="list-style-type: none"><li>• information literacy</li><li>• information and communication technology (ICT) literacy</li></ul>
<p>WAYS OF WORKING</p> <ul style="list-style-type: none"><li>• communication</li><li>• collaboration (teamwork)</li></ul>	<p>WAYS OF LIVING IN THE WORLD</p> <ul style="list-style-type: none"><li>• citizenship – local/global</li><li>• life and career</li><li>• personal and social responsibility (including cultural awareness and competence)</li></ul>

**Figure 1** Framework for 21st century skills (according to Care et al.).

industries and thus also changing job requirements. Under the heading “21st century skills”, attempts have been made to specify the competences needed in this new world (OECD 2018, Care et al. 2018, see also Figure 1).

The Bologna Process has to be understood in this context. What gave rise to the Bologna Process was an ambitious vision to turn Europe into the most competitive, dynamic and science-based economic area in the world. To transform such a vision into action, the Bologna Declaration for pan-European degree reforms was signed in 1999. Since then, almost 50 European countries have joined this reform process. The cornerstones of the Bologna Process are:

- the restructuring of degree courses (Bachelor/Master/Doctorate),
- transparency, compatibility and mutual recognition of course credits across all European countries (ECTS – European Credit Transfer System, workload, competences),
- quality assurance in higher education (EQF – European Qualifications Framework / NQF – National Qualifications Framework),
- realignment of higher education to fit current and expected future developments in a globalised, knowledge-based economy (lifelong learning, employability, mobility, digitalisation).

The focus on employability and competences is not undisputed, but the growing gap between imparted knowledge in higher education and the deficiencies students show in applying it is widely acknowledged. The 2015 Bologna Process Implementation Report mentions progress with the broad implementation of degree structure harmonisation. However, it also refers to significant differences in quality between participatory higher education institutions and countries that hinder student mobility and do not recognise academic credits on an equal basis (European Commission/EACEA/Eurydice 2015).

Awareness of the Bologna Process’ impact on higher education teaching with its strongly learner-centred pedagogical reorientation is still absent in many places. Many countries have anchored student-centred teaching as a guiding principle in official documents. There is a well-recognised

obligation to produce documentation on learning outcomes, on teacher training for higher education faculty members and on formal student evaluation of modules (European Commission/EACEA/Eurydice 2015, p. 73f.). However, there still seems a long way to go before the official policy becomes implemented as regular practice. Traditional ideas often still dominate the reflection on how to design teaching for higher education institutions. Besides thinking about the selection of teaching material, concepts on how to support student learning are rare. Considerations on how to tackle these challenges in higher education teaching will be presented in the following chapters.

## **1.2 Performing – learning – teaching**

In the German-speaking pedagogical tradition, the term “didactic” refers to the science of teaching and learning. The term comes from the Greek word *didactos* and means something like “teachable”. As the etymology shows, all the basic constituents that are part of contemporary higher education teaching and learning are already captured in this word:

- the activity of teaching,
- the selection of content to be learned,
- the teaching resources, i.e. the methods and media,
- the understanding of schools and classrooms as spatial and social environments and
- learning.

In the Bologna terminology, the essence can be captured in the triad “performing – learning – teaching” (see González & Wagenaar 2003). Following this triad, contemporary higher education should start by considering “performing” and only deal with questions about “teaching” at the end (see Figure 2). This means that the formal acquisition of knowledge, skills and attitudes is not an end in itself but always stands in relation to what society and the world of work demands of the graduates. Put simply, students should be equipped to cope with life in a modern society and to participate in bringing about social progress. From what is being per-