# Programme Structures, Learning Outcomes, and Student Assessment – did the Bologna process make any difference?

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***Abstract*—The Bologna Process has induced significant structural changes of higher education at the national level in Europe. The overall intention is to make European higher education more competitive and to ease student and work-force mobility. The process also builds on a shift to outcome-oriented curricular systems based on intended learning outcomes to make qualifications comparable. As student assessment is the way to prove that the qualifications are at hand, changes of assessment processes should be part of the curricular aspects of the Bologna process. However, the recommendations are implemented in different ways in various national and institutional contexts. Our question was: What effects on programme structure, syllabi and student assessment can be seen at an institutional level in a Swedish national context? Three engineering programmes were studied before and after the reform. *Results:* The changes framed by the Bologna process are evident both at the national and at the institutional level. At the programme level both structural and curricular changes are noted. But change gets less visible closer to the teaching and learning process. Though the descriptions of the qualifications aimed at are made more demanding, the assessment system seems to be practically uninfluenced and the students do not regard the intended learning outcomes as guiding their learning in a more explicit way than the older syllabi did.**

***Index Terms*—the Bologna process, structural and curricular change, classification systems, student assessment.**

## I. Aim of the Research Project

THE research emanates from a project investigating the interplay between formal assessment systems and the development of students' and teachers' work in the actual assessment process [1]. The overall objective is to gain a better understanding of how assessment processes in higher education are changing due to the introduction of the Bologna process. However, the shift to outcome-oriented curricula included in the Bologna process is a part of the context framing the development of student assessment in Europe. But it is not clear whether student assessment or other important aspects of teaching and learning really will be affected by the implementation. Perhaps the curricular reform will be limited only to a superficial change of the labels describing the system of higher education at the European or national level? The purpose of this project is to study the changes carried out in three engineering programmes at a Swedish university during the implementation of the Bologna process. The aim is to capture the changes through a comparison of programme structures, syllabi and assessment structures at the bachelor level before and after the reform and relate the findings to the Bologna recommendations and the national Swedish Bologna reform in 2007.

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## II. Theoretical Perspective and Method

### A. Perspective

The theoretical perspective underpinning the analysis is founded in social practice theory [2] and a socio-cultural perspective on human learning [3]. The recommendations and frameworks agreed on in the Bologna process are apprehended as a complicated artefact, consisting of several new and more encompassing classification systems, as this concept is described by Bowker and Star [4] in their seminal work: Sorting things out - Classification and its consequences.

A classification system is a human artefact, at the same time both material and symbolic in nature. It works as a set of boxes (metaphorical or literal) into which things can be put, to then do some kind of work, to orderly structure time, space, "things" of the world or human knowledge. Classification systems work as regulating artefacts underpinning cooperation across several social worlds or communities of practice. For instance, the division of a day and a night into 24 hours is a globally accepted classification system for time. Classification systems shape major aspects of the taken for granted infra-structure of our civilised lives. Organisational life, for instance in higher education, means social interactions shaped by layers of several classification systems at different levels. Both globalisation and centralisation of social practices depend on the development of more inclusive and common classification systems. These may also work as disembedding mechanisms as they remove social relations from the immediacies of context [2]. To replace older, more local and integrated classification systems with new more overarching ones are no simple processes. The Bologna process builds on the development, acceptance and implementation of several new classification systems sorting out: higher education cycles, qualifications, credits and the outcomes of human learning.

The intense political interest, which has fuelled the power of the Bologna process, has its roots in the perception of human competence as an economically important social good. The new, more inclusive, classification systems are perceived as necessary tools in the creation of a "free market" for knowledge. And as a consequence, and as a surprise for many a professor in higher education, the different ways of designing syllabi is suddenly regarded as an important matter.

The formal curricular system of higher education in a certain nation or higher education institution consists of a row of formal regulations concerning, for instance: rules for affording degrees and formal qualifications, the conditions for the design of syllabi and the organisation of study programmes and credits. The system also includes all of the syllabi. The curricular system is the formal network that makes a certain syllabus valid and guarantees the students a legal path towards their degree, at the same time as it depicts both the duties and the rights of students, teachers and higher education institutions towards each other in the educational process. Curricular systems are viewed as multi-layered classification systems; they integrate and combine several other classification systems: regulating fields of study, credits, grading and – depending on curricular model – 'learning outcomes'.

### B. Method

We are studying three different engineering programmes at the Faculty of Engineering at Lund University in Sweden before and after the national reform that was launched in 2007 to implement the Bologna process. The three programmes are different specialties all leading to the degree of Master of Science in Engineering (300 ECTS-credits). The *research methodology* includes document studies and qualitative interviews with programme directors. We are analysing and mapping information from official documents linked to the first three years in each of the programmes, all syllabi, study-guides, schedules, and samples of assessments and assignments delivered before and after the reform. We are especially looking for the character of the changes in programme structures, syllabi and in assessment structures. The changes are further explored by analysing qualitative interviews with programme directors and interpreting data from student course evaluations (CEQ) during the period.

## III. Preliminary results

The changes introduced by the Bologna process are evident both at the national and at the institutional level. The descriptions of the qualifications aimed at are made more demanding. The changes are most evident in the assessment systems that now include syllabi with intended learning outcomes and a new credit system. At the programme level both structural and curricular changes are noted. However, single assessments seem to be practically uninfluenced by the shift to outcome-oriented curricula. Our research show that in the modularised programmes of study, the assessment processes can best be described as a series of boundary encounters, linked together only by the assessment system both before and after the reform. Hence, the character of assessment processes in higher education might not transform as rapidly as could be expected from the official pace of the Bologna process.

*Identified changes at the institutional/faculty level:*

- The descriptions of the qualifications for programmes were made more demanding
- The application of the new credit system seems to be formal only
- Rules and regulations for the design and classification of syllabi are followed

*Identified changes at the programme level:*

- Syllabi with intended learning outcomes were produced for all individual courses
- Some structural changes were implemented at programme level
- The overall assessment structure seem to be practically uninfluenced by the shift to outcome-oriented curricula

*Drivers for change at programme level: results from interviews with programme directors*

- Most changes linked to the compulsory implementation of new classification systems were carried out without influencing the programme structure.
- Productive changes carried out at programme level mostly seem to be solutions of immediate problems at this level.
- How the shift to the new classification systems is utilised as a driver for change seems to vary a great deal between programmes.
- There was a rapid production of intended learning outcomes for individual courses

*Conclusions*

- The Bologna process in Sweden did not focus the structural aspects. The modular educational system was not affected by the shift to three cycles in professional programmes.
- The difficult part was not primarily the introduction of intended learning outcomes for courses, but to show how teaching and student assessment at course level are aligned with the intended learning outcomes for the degree. This is still only partly implemented!
- A new quality assurance system will be implemented from 2010. Programmes are expected to show how intended leaning outcomes for degrees are fulfilled

## References

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