The moving border of tacit and explicit knowledge in e-Learning:  
Use and production of information and knowledge in technical university  
education, case study

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ABSTRACT
In this paper, the electronic information and knowledge created within a context of a course is  
approached by analysing two case study courses. The Finnish context of the university education  
is first outlined briefly. Approaches to learning resources are reusability and course components.  
The two case studies are a series of courses of energy engineering and environmental protection,  
and a programming course. The courses were developed in different department cultural  
context and circumstances, which are described. When the focus of course material creation is  
on methods, the reusable material might be related to resources meant to help the student.

INTRODUCTION
One of the often-mentioned benefits of e-Learning is the externalisation of the content and  
process of the courses, which can support reuse of material across courses. Yet most of the  
course management systems financially available for higher education organisations do not  
support ideas of knowledge transfer or learning organisation and content remains blocked to one  
course.

Libraries, information services and commercial organisations provide access to electronic  
materials. However, these possibilities do not seem to be widely used in higher education. There  
may be several reasons for this: complicated procedures of intellectual property rights,  
attitudinal and cultural barriers and even teachers’ inadequate skills in searching the electronic  
information and knowledge. One fundamental reason might be that strict externalisation is not  
regarded as fruitful in knowledge transfer, or that the externalisation effort considered huge  
compared to the short lifetime of the information and knowledge. Also the available technology  
in the organisation may be hard to use or may not support the ideas of the teacher.

The OECD report on Knowledge Management in the Learning Society (2000, 12) claims that we  
have not yet reached a stage where we can systematically apply knowledge to the production of  
knowledge. Although higher education knowledge is highly codified, there is much tacit  
knowledge in teachers’ know-how (Ibid 31).

Do we really know what is happening in grass-roots level of ICT enhanced higher education?  
What kind of information and knowledge is available for the whole community of a course, which  
includes instructors and students? What kind of information and knowledge is produced by the  
instructors and is there any knowledge used as a resource, created by the student? What kind of  
external resources are used? What is the potential reusability of the information and knowledge  
produced for the course? These are the main questions of this paper.

In the following, the national context of the university education is first outlined briefly, before  
going to the approaches to learning resources. The method of case study is then introduced and  
the cases described briefly. Finally, the first results of the study are presented and discussed.

CONTEXT: NETWORK-BASED EDUCATION AS A GOAL FOR UNIVERSITY SECTOR IN FINLAND

The Finnish ‘Development plan for education and university research for the period 1999-2004’  
states the following about university education: