

## Chapter 2

# Formalized Informal Learning: ICT and Learning for the 21st Century

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### ABSTRACT

*Longitudinal research projects into social practices are both subject to and capture changes in society, meaning that research is conducted in a fluid context and that new research questions appear during the project's life cycle. In the present study emerging new performances and uses of ICT are examined and the relation between network society competences, learners' informal learning strategies and ICT in formalized school settings over time is studied. The authors find that aspects of ICT like multimodality, intuitive interaction design and instant feedback invites an informal bricoleur approach. When integrated into certain designs for teaching and learning, this allows for Formalized Informal Learning and support is found for network society competences building.*

### 1. INTRODUCTION – RESEARCH IN A FLUID ENVIRONMENT

This paper presents findings from a large-scale longitudinal, qualitative study – Project ICT and Learning (PIL) – that engaged the participation of eight primary schools in Denmark, and was conducted between 2006 and 2008. The research

design was based on action research, involving teachers and other relevant stakeholders, as well as participant observations in the classroom documented by thick descriptions, formal and informal interviews and focus group interviews. The aim of the study was to explore and identify relations between designs for teaching and learning and the students' learning of school subjects within defined learning goals and curricula along with various implementations of ICT in the pedagogical everyday practice (Levinsen & Sørensen, 2008).

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However, another research strand – the topic of this paper – emerged during the project's life cycle as a consequence of ongoing changes in society and technology. Thus, the first part of the paper is dedicated to the presentation of the gradual formulation and grounding of the research design for this new strand.

During the study, interactive whiteboards gradually came into use as a significant implementation of ICT while the students initiated the use of Web 2.0 resources in the school by simply using them. Occasional use of mobile phones initiated by the students was also observed. Gradually, the relation between the students' informal and the teachers' traditional approach to ICT emerged as an important theme, as it was observed how the students performed certain ICT-related activities at a higher level than the teachers and that the traditional teacher-student relation became challenged in both positive and negative ways; e.g. it was observed that in relation to the students' formal learning involving the use of Web 2.0, some school classes produced genuine trivia in terms of simple copy-paste solutions in fulfilling formal tasks, while other classes expanded beyond the defined learning goals of their grade levels. These phenomena were to a higher degree observed in relation to the introduction of Web 2.0 in the classroom than in relation to the traditional use of ICT in terms of applications and learning objects. These further raised questions such as: Does ICT or instances of ICT play a role in the observed changes in the classroom when Web 2.0 and occasionally mobile phones are used? If the answer is yes, then what kind of role is it? What can we learn from that? Do the students' informal strategies encompass qualities that may be useful for a school's general adjustment to the challenges of society's ever-increasing e-permeation?

As a consequence of these emerging phenomena, a new research strand emerged and the project had to formulate additional research questions and identify new empirical fields of attention for data collection, along with analytical categories.

In order to achieve this, it became necessary to frame an understanding of the character of society's transition from industry to network society, and grasp core concepts such as key competences and ICT-related competences or ICT literacy. In the beginning, it was perceived that this would entail an uncomplicated adjustment to the project; however, it soon turned out to be a bit more complex. Therefore, the next section of the paper is dedicated to a discussion about the transition from industry to network society and related core concepts that helped ground the research questions for PIL's new research strand and the subsequent modifications of the project's research design.

## **2. FROM INDUSTRY TO NETWORK SOCIETY**

In his book, *The Hypercomplex Society* (1998), Qvortrup states that our society moves towards increasing hypercomplexity and that the industrial mode of production gradually has come to be replaced by the hypercomplex society's mode of production in which companies produce and process knowledge and offer network services as commodities. At the same time, the production units have come to be ad hoc – open and transparent project organisations that are made possible by the global digital network. According to Qvortrup the individual and organisational challenge is to deal with and reduce the hypercomplexity in adequate ways. The relations between globalisation, networked and ad hoc organisational forms and digitalisation are explored further by Manuel Castells in his acclaimed sociological study, *The Information Age* (2000). According to Castells, the industrial era of wireline networks saw the role of ICT as a tool in relation to production whereas ICT tools were allocated and delineated to definable locations. In the network society this view of ICT makes no sense because ICT has become ubiquitous and is just as integrated in such domains as politics, the military, economic power, society

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