ICT-competency: what's in a name?

In several countries there is a growing interest in monitoring the integration of ICT in education, e.g. the Netherlands, Scotland, the Flemish Community (Belgium). Research shows that different factors contribute to the ICT integration in educational practices, such as infrastructure (Williams et al., 2001; Johnson & Maddux, 2006), school policy toward ICT (Tearle, 2003), attitudes and perceptions on ICT (Albirini, 2006). Several authors found ICT competencies as an important determinant of ICT-integration for teaching and learning (Albirini, 2006; Mumtaz, 2000; Tearle, 2003; Pelgrum, 2001). The study of ICT-competencies of teachers and learners is the central topic in this paper. The focus of this paper is: (1) the theoretical exploration of the concept of ICT-competencies, resulting in an operational definition (2) the review of international research and existing ICT-monitoring systems concerning ICT-competencies, resulting in some suggestions for the development of an instrument to measure ICT competencies. Depending on the research discipline, the theoretical perspective and the broader context in which ICT-competencies are studied, different meanings are given to ICT-competency and different aspects are stressed. However some similarities can be found. Many authors (e.g. Cesarini, 2004; Savolainen, 2002; Schneckenberg & Wildt, 2006) state that a meaningful definition of (ICT-)competency is related to concrete contexts and has a link with the ability to act in this context. A knowledge component and a skills component can be distinguished in this ability to act. Some authors stress the close relationship with ICT-attitudes or even consider attitudes as an element within the concept of ICT-competency (e.g. Albirini, 2006; Verloop, 2003). The literature review results in an operational definition of the concept “ICT-competency”: an integrated set of knowledge, skills and attitudes for functional use of ICT in an educational context”. The next step is a review of international research (e.g. SITES 2006) and existing ICT-monitoring systems in the Netherlands, Scotland, England and Canada. The focus in this review is on (1) which aspects of ICT-competencies are included in the instrument; (2) how are they measured; and (3) which actor (school leader, teachers, pupils) is questioned. This review results in a list of scales and items to measure ICT-competences, as conceptualised in the
operational definition. The literature review and the review of existing instruments can contribute to the construction of an instrument to measure teachers’ and learners’ ICT-competencies. It provides a scientific basis to decide which indicators on ICT-competencies should be retained and further operationalized. It also points at aspects that should not be ignored, such as the contextuality of ICT-competences and the importance of integrated and functional use of ICT as a key aspect of ICT-competency.

**Method**

The literature research presented in this paper consists in a review of international literature, existing research and monitoring instruments.

**Expected Outcomes**

This literature research contributes to the understanding of ICT-competencies and can provide a deeper insight in the complex interaction between different components influencing ICT-integration in educational practices. It can contribute to the development of an instrument to measure ICT-competencies, which is not only relevant for educational science, but also for policy makers. Research can provide them with reliable and up-to-date information for future policy decisions. Research results are also valuable for the participants themselves (school leaders, teachers and/or pupils): school feedback can stimulate schools in their process of professional development.

**References**


**Author Information**

**Marleen Evers**
Katholieke Universiteit Leuven, Belgium

**Jo Tondeur**
Ghent University, Belgium
Johan van Braak
Ghent University, Belgium

Ilse Sinnaeve
Ghent University
Department of Educational Studies
Roeselare