

# Chapter X

## Re-Culturing Beliefs in Technology: Enriched Classrooms

**Tamar Levin**

*Tel Aviv University, Israel*

### **ABSTRACT**

*Drawing on the empirical data from two longitudinal studies, the chapter describes the evolution of teachers' educational beliefs and their actual classroom practices when using ICT in the schools. It also identifies three different classroom cultures with differing assumptions and practices concerning teaching, learning, and technology use. Highlighting the fact that teachers' beliefs are shaped by everyday classroom and school experiences, and using teachers' statements, metaphors and observations, the chapter shows changes occurring in the beliefs and classroom practices of several teachers. It shows that following several years of ICT use teachers changed their educational lenses, demonstrating multiple views rather than pure beliefs. Finally it demonstrates that the enculturation of teachers into ICT-enriched classrooms is influenced not just by the technology used, but also by the richness of the overall learning environment with its emphasis on non-structured tasks and rich technology-based resources, and by their exposure to new educational vistas.*

### **INTRODUCTION**

This chapter recognizes the powerful role of teachers in changing school practices when they overcome the constraints of habits developed as a result of their established educational beliefs, and challenges traditional school cultures in the context of using information and communication

technologies (ICT). It demonstrates the complex process that occurs when teachers learn to teach with ICT, and shows that in order to enhance teaching and learning in a technology-enriched environment, teachers' beliefs on the meanings and roles of learning, teaching and technology have to change. Drawing on the empirical data from two longitudinal studies, the chapter describes teach-

ers' beliefs regarding classroom life when using ICT in the schools, and identifies three different classroom cultures with differing assumptions of teaching, learning, and technology use.

The development and spread of new digital technologies has led to major changes in the way we do many things in our daily lives and our schools, and even affects our identities. ICT have become a natural part of people's lives in western information societies, where for example, the internet is used for reading newspapers, keeping in touch with friends, paying bills, and searching for information for both private and professional purposes. In the educational context as well, digital technologies offer new resources for learning and support new modes of teaching and learning. They also challenge processes of knowledge interpretation, increase opportunities for educational research, and create new demands and expectations of teacher and student development as individuals, groups, and communities. For example, teachers and students are expected to develop the awareness and skills for accessing technology and media-based resources, which require the use of both print and non-print material, images, texts, language, sound, and motion. This all has to be done to produce, convey, analyze, and evaluate informational communications and messages, and selected subject matter or interdisciplinary knowledge. And, as for the schools, they are also expected to transform their goals, enrich their repertoire of classroom practices, and add ICT to their available teaching and learning tools and resources.

Given that schools must respond to the demands of multi-media technology, the integration of learning and communication technologies into schools and schooling has been well supported by educators and greatly speeded up. Underlying this support is the belief that the successful incorporation of ICT empowers both teachers and students to produce better teaching and learning processes as well as outcomes. ICT has also been hailed as the catalyst for restructuring and re-culturing

school and classroom practices, for fostering environments that elicit constructivist-based learning and collaborative educational practices, and for encouraging the development of higher-order and multi-literal learning and inquiry skills. Through all these factors ICT can help to nurture mindful and self-regulated teachers and students. This approach to ICT use presents a challenge to the traditional use of information technology in the classroom, as viewed by Cuban and Tyack (1995), who despite their criticism of the implementation quality of ICT in schools, believe that computers are far the most powerful teaching and learning machines to enter the classroom and that students and teachers can interact with computers in ways impossible with film, radio, and television.

However, researchers, techno-reformers, and teachers all admit that despite the research accumulated over the past three decades, the educational system has largely remained unchanged (Albion, 2003), and many questions regarding the effective use of ICT still remain unanswered. There is a gap between ambitious visions of ICT in new educational reform and its quality of use in school, and teachers only superficially accept technology into their work, even when it is available to their students (Cuban, et al., 2001). Typically, teachers use linear, authoritative, teacher-centered methods, they disregard computers and resist efforts to move the dominant paradigm away from teacher-centered teaching to a more student-centered classroom (Semple; 2000). While this gap is partly due to obstacles that impede the successful implementation of ICT, such as lack of infrastructure / access to educational software / and teachers' ICT pedagogical skills, a major cause is attributed to teachers' educational beliefs and their personal theories about teaching and learning, since these beliefs strongly influence classroom practices (Ertmer 2005; Lim & Khine, 2006).

Fullan (2001) has emphasized the importance of teachers' educational beliefs noting that educators' visions of the potential for educational change

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