FACTORS AFFECTING TEACHERS’ PEDAGOGICAL ADOPTION OF ICT

Bridget Somekh
Education and Social Research Institute, Manchester Metropolitan University, Manchester, UK

Insights from Socio-Cultural Theory

Much of the research on teachers’ use of information and communication technology (ICT) in their teaching describes low levels of usage and minimal pedagogical change. Around the world, when visionary policy initiatives have frequently resulted in minimal change in classroom practice, evaluators tend to blame teachers and urge more “training;” a consensus has developed for a deficit model that assumes failure to be caused at the levels of the school and the classroom, and teachers’ “resistance” to be the core obstacle to be overcome. In this chapter I want to explore an alternative analysis. However, it is useful to begin by focusing briefly on some key findings derived from studies adopting these assumptions. An excellent review of the factors affecting teachers’ use of ICT over the previous 20 years is provided by Mumtaz (2000). She provides summary lists of “inhibitors” to teachers’ adoption, including “lack” of experience with ICT, on-site support, ICT specialist teachers, time, access, and financial support; and causes of “teachers’ resistance” (outside intervention, time management, lack of administrative support or organisational change, and teachers’ perceptions linked with “personal and psychological factors”). She provides a good overview of factors that encourage teachers to use technology drawing on surveys of teachers’ perceptions and attitudes conducted in the USA (e.g. Hadley and Sheingold, 1993); and qualitative studies of teachers learning to integrate use of ICT in their teaching. Webb and Cox (2004) provide an extensive review of research into the relationship between pedagogy and ICT, drawing on the European tradition of pedagogy as “the science of teaching.” They present a “framework of pedagogical practices relating to ICT use,” which enables a sophisticated analysis of the relationship between teachers’ knowledge and beliefs, pedagogical reasoning and behaviours; the affordances of technology; and students’ knowledge, beliefs and
behaviours – and how these impact on the learning activities which lead to the development of students’ knowledge, understanding and skills.

The analysis presented in this chapter adopts a rather different framework, based on socio-cultural theory, which assumes that processes of change in schools and classrooms cannot be understood in isolation because they are necessarily co-constructed with students or local communities, and constrained or enabled by the regulatory frameworks and policies of national education systems and national cultures. Thus teachers’ beliefs and attitudes, and their confidence and competence with ICT, remain centrally important in the pedagogical adoption of ICT, but teachers are not “free agents” (there is indeed no such thing) and their use of ICT for teaching and learning depends on the inter-locking cultural, social and organisational contexts in which they live and work. Although neither Mumtaz nor Webb and Cox adopt this approach, their reviews lend support to such a socio-cultural analysis of the process of ICT innovation. For example, Webb and Cox include students’ values, beliefs and knowledge in their pedagogical framework and comment that “most of the studies considered in this article did not consider this issue specifically and there is a need for further research to address this” (Webb and Cox, 2004, p. 276).

Rather than teachers being somehow to blame for the lack of pedagogical transformation when ICT is introduced, this chapter will argue that the failure lies with both policy-makers and evaluators who have little understanding of the process of technological innovation. Drawing on socio-cultural theory, in particular, the insights it offers to the co-constructed, cultural–historical nature of social practices and the mediating role tools play in their development, the proposition will be made that radical structural changes to education systems and schools are needed if schooling is to be transformed by ICT. This approach draws on the insights of a number of other researchers (Cole, 1996; Crook, 2001; Saljo, 1999; Sutherland, 2004). What is argued is that the legislative frameworks and organisational structures of schooling often make it impossible for ICT tools to be explored and appropriated pedagogically. They severely constrain teachers’ and students’ agency, because they are in effect cultural tools that mediate pedagogies of blackboard and chalk. They reinforce teachers’ traditional roles and beliefs. Education systems can be understood as outdated infrastructures resisting inevitable change. As McLuhan (1964, p. 379) argues, “Continued in their present pattern of fragmented unrelation, our school curricula will insure a citizenry unable to understand the cybernated world in which they live.”

In this chapter pedagogy is defined as the interactive process by which a student’s learning is mediated by teachers using a range of tools (Vygotsky, 1978, p. 27). These tools, including language, conceptual frameworks and artefacts such as books and computers, are continually developing and changing. As we become skilled in their use we develop social practices to incorporate them as extensions of ourselves (McLuhan, 1964, p. 7) and depending on how we use their affordances they shape and change the nature of those practices, empowering us to do things previously beyond our capability (Wertsch, 1998). Following Alexander (2000) pedagogy is conceptualised here as a set of culturally contextualised social practices, which requires holistic analysis: “Culture both drives and is everywhere manifested in what goes on in classrooms, from what you see on the walls to what you cannot see going on inside children’s heads” (p. 266).