Chapter XXV
Using Online Tools to Support Technology Integration in Education

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ABSTRACT

This chapter explores the possibilities of online tools to support ICT (Information and Communication Technology) integration in primary education. Before describing three valuable tools, a framework will be discussed which gives schools insight into the most important preconditions for successful use of ICT in relation to the selection of a specific tool. Consequently, three specific tools are described: (1) the "Four in Balance" tool measures a school's current use of ICT, (2) the "ICT-Assessment tool" focuses on teachers' knowledge and skills and corresponds with the school's vision on 'good' education, and (3) "pICTos", an online tool that supports the process of ICT planning in schools. These examples illustrate how the tools operate and their many possibilities.

INTRODUCTION

Effectively integrating ICT into learning systems and schools is a much more complicated phenomenon than providing computers and securing a connection to the Internet. Computers are only an instrument and no technology can fix an undeveloped educational philosophy or compensate for inadequate practices (Ertmer, 2005). Therefore, choices have to be made in terms of educational objectives (Sugar, Crawley, & Fine, 2004). In this respect, **ICT integration** is a dynamic process involving interacting factors over time (Brummelhuis, 1995). Moreover, no single solution exists to address the immense challenges of ICT integration because different perspectives of integrating ICT can be chosen (Niederhauser & Stoddart, 2001). In this respect, many teachers, **school principals**, educational authorities and researchers are considering a range of questions about how to use ICT with young children, such as: What educational goals and learning objectives will be accomplished by using ICT in schools? Is there a need for a specific course in computer literacy? How can ICT be implemented effectively in existing subjects? Many of the questions related to ICT integration are still unanswered, and attempts to address them have generated widespread debates. Clearly, no "off-the-shelf" configuration meets the diversity of needs and conditions for integrating ICT in education.

This chapter starts from the idea that **online tools** can be applied to support the process of ICT-integration. It focuses specifically on the use of electronic tools as supporting tools for ICT-integration. There is still little research literature on the subject of the application of such tools in education. A study of De Groot and Van den Elzen (2003) confirms that the characteristics of ICT can play a particular role in improving the application of ICT in education. ICT is able to accelerate the total innovation process while at the same time contributing extra content matter. In regards to the role of ICT in the innovation process, Davenport (1993) makes a distinction between a content supporting role (for instance, generating new information), a procedure supporting role (for instance, raising, unlocking and reporting of information) and a group supporting role (for instance, providing communication). The three tools described in this chapter illustrate the three roles of ICT-related support within the specific processes underlying ICT integration in education.

The tools are examples of online measuring instruments to support schools in the educational use of ICT. They can be framed in a model that reflects a school-improvement perspective. In brief, school improvement is a practice- and policy-oriented approach to strengthen schools' capacities for managing change (Creemers, 2002). Reynolds, Teddlie, Hopkins and Stringfield (2000) argue that a school-improvement approach to educational change embodies the long-term goal of establishing a self-renewing school. They stress the central role of the school level in mediating change and focus on the problems and internal conditions of the schools (Brummelhuis, 1995; Wikeley, Stoll, & Lodge, 2002). ICT integration can be seen as a specific case in the wider field of school improvement and educational change (Tearle, 2004; Watson, 2006). A clear example is the development of a shared vision concerning how ICT is to be used for teaching and learning (Hughes & Zachariah, 2001; Otto & Albion, 2002). In this view, the use of ICT in schools is not an individual event but is, when used effectively, launched by the whole team. The tools described in this chapter can be used individually by a teacher but will be less effective than the use of the team version.

The first and second tool – the Four in Balance tool (to measure the ICT situation of a school) and the ICT-Assessment tool (that focuses on teachers' knowledge and skills) – are used relatively often in the Netherlands. They have been developed by Kennisnet, a public foundation that cooperates at both national and regional levels with schools,