An ever-widening gap exists between how students and schools use communication technology. *Using Network and Mobile Technology to Bridge Formal and Informal Learning* introduces new methods (inspired by 'pedagogy 2.0') of harnessing the potential of communication technologies for teaching and learning.

This book considers how attitudes towards network and mobile technology (NMT) gained outside the school can be shunted into new educational paradigms combining formal and informal learning processes. It begins with an overview of these paradigms, and their sustainability. It then considers the pedagogical dimension of formal/informal integration through NMT, moving on to teachers' professional development. Next, the organizational development of schools in the context of formal and informal learning is detailed. Finally, the book covers the role of technologies supporting formal/informal integration into subject-oriented education.

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Key Points

- includes a framework for the sustainability of new educational paradigms based on the combination of formal and informal learning processes supported by network and mobile technology (NMT)

- provides a series of recommendations on how to use attitudes towards NMT gained outside the school to integrate formal and informal learning

- gives a teacher training approach on how to use network and mobile technology-based informal learning to enhance formal learning pathways

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PREFACE

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Speaking about the integration of communication technology into teaching and learning processes we cannot ignore the wide and indeed ever-widening gap that divides the students' personal/daily use of web 2.0 and mobile technology and the way schools propose them for educational activities: on the one hand, there are the newest generation of students (sometimes called "digital natives") with their innate capacity for mastering technologies, using them for both social and learning purposes, albeit with little or no method; on the other hand, there are the teachers ("digital migrants") who, while making admirable attempts to innovate their teaching, tend to propose an educational use of 2.0 resources based on conventional methods and practices of study, anchored to old teaching schemes. It would instead be necessary to conceive and introduce new methodologies inspired by the so-called *e-pedagogy*, which are able to fully exploit the potential of network technologies both for social interaction and for accessing information.

e-Pedagogy presents an innovative approach to teaching/learning processes, characterised by informal processes (among both students and teachers) aimed to answer specific, localised knowledge needs, in which serendipity is often synonymous of incidental learning.

But since this type of learning is not planned by either student or teacher, the problem of its connection to formal learning paths arises. In this sense we need to understand how much of this "activism", which is frequently immediate and instinctive and expresses itself through videos on YouTube and posts and links on social networks, might be transferred to formal learning contexts and adapted to formal curricula.

In other words, it is worth considering how the uses of network and mobile technology (NMT) which have been autonomously acquired by students and teachers outside the school context could be channelled towards new educational paradigms which combine formal and informal learning processes centred on accessing information and social interaction.

With this in mind, the aim of the book is to analyse and discuss: a) the conditions that should ensure real sustainability in the integration of informal and formal/institutional learning dimensions; (b) the potentialities offered by NMT exploitable in favour of such integration.

The book is divided into 8 chapters, each of which offers a complementary point of view on how NMTs can help to bridge the gap between formal and informal learning.

In Chapter 1, Cathy Tran, Mark Warschauer and AnneMarie Conley demonstrate how educators are looking for ways to tap the educational potential of mobile technology as it becomes increasingly prevalent. The chapter argues that one of the biggest strengths of handheld mobile devices is their potential for increasing learning motivation.

Elements such as their small size, geolocation awareness, instant information access, and tactile features all contribute to a portable and personal experience that can motivate learners.

The theme of motivation is also addressed by John Cook, Norbert Pachler and Ben Bachmair, who in Chapter 2 point out the potential of the social media and personally-owned mobile devices for bridging the gap between media use in everyday life and the requirements of school and higher education. The chapter offers a wide perspective over access to 'cultural resources' facilitated by digital media (e.g. learning resources, health information, cultural events, employment opportunities, etc.). The purpose of the chapter is to reclaim the notion of 'cultural resources' for the educational environment since it seems relevant to discussions about social mobility and fairness of access.

In Chapter 3 Thomas Cochrane and Roger Bateman present a mobile web 2.0 framework for pedagogical change, based upon the implementation of over thirty mobile learning (mlearning) projects between 2006 and 2011. The projects utilised mobile devices for student-generated content and for enabling student-generated learning contexts. The framework is based on contemporary social learning theory and illustrates the potential of mobile web 2.0 tools to bridge the gap between formal and informal pedagogically-designed learning contexts and to cross international boundaries.

In Chapter 4, Julie Willems and Debra Bateman discuss the use of Facebook in higher education. Using a knowledge-sharing framework created by the intersection of two continua (formal and informal learning opportunities; and student-directed and teacher-centred learning), and an exemplary Facebook case study for each of the four quadrants of the framework, the chapter explores institutional (or teacher)-driven informal teaching and learning; student (or member)-driven informal teaching and learning; student (or member)-driven formal learning; and institutional (or teacher)-driven formal learning.

Also in the school context there is a strong need to understand how digital media can best be exploited to innovate teaching, making it correspond more closely to students' communicative habits. However, many studies demonstrate how current school organisation still constitutes a barrier for any development related to the integrated use of digital media. The interconnections and networking between these two life-worlds experienced by young people present a challenge to researchers. To investigate such networking, Solveig Roth and Ola Erstad have used a learning ecology methodology to identify those explicit physical or virtual contexts that can provide opportunities for learning in everyday learning life. In Chapter 5, the two authors describe their methodology, pointing out how interest-driven learning, based on out-of-school digital practices, enables students to use research-based methods for methodological reasoning and structured problem-solving and to draw on interests and expertise from different contexts.

To achieve these aims two conditions are required: (a) an organisational development of the school institution to foster didactic innovation in which NMT use is the normal condition, just as use of the traditional blackboard, paper and pen used for a long time to be the normal condition; (b) a process of continual professional development of teachers which is no longer (or not only) based on formal training so much as on informal learning processes specifically centred on NMT use.

In Chapter 6, Guglielmo Trentin discusses the complementary nature of these two conditions. Organisational development aimed at pedagogical innovation cannot work without adequate corresponding professional development of teachers. Viceversa, professional development of teachers without any guarantee of the institutional

conditions for putting a real pedagogical renewal into practice would end up by hindering any large-scale diffusion of such a renewal.

In order to act on both these conditions we must be aware of the rapid changes in everyday learning life and consequently of how the figure of the "e-teacher" should be "modelled" to produce someone who is able to use NMTs both for their students' learning and for their own continuous professional development.

An example of the use of network technologies for teachers' continuous professional development is the central focus of Chapter 7, where Manuela Repetto presents the ALADIN project, pointing out the informal approach adopted (based on action research), the results achieved and the critical factors which would help or hinder such an initiative in becoming a continuous education practice in teacher professional development.

In the final chapter (Chapter 8), Cathleen A. Norris and Elliot Soloway make some conclusive reflections on the central theme of the book, focussing on the concept that NMTs might be the ideal tool for a true pedagogical innovation based on learn-by-doing. The authors look to the future and declare their conviction that with NMTs *the opportunity to change education is literally "at hand"!*

We wish to thank all the authors who have contributed with their precious scientific knowledge and experience to the writing of this book, which is addressed to all those who like us desire to constantly increase their understanding of the best educational use of NMTs for integrating formal and informal learning.