Introduction

This chapter aims at identifying some trends in the practice of mobile learning in adult education and at providing some recommendations for policy, practice and research. It is based on the work presented in the previous chapters, on discussions in team meetings and on experience gathered by partners. More specifically, the scenarios described in Chapter 4 were tested in a series of workshops, which took place in 2011-2012 in respective partner countries. These activities, which are described in the reports available on the project website (http://www.mymobile-project.eu), as well as the considerations offered by partners in their scenario presentations, help us to identify some trends that have emerged from experience and to draw relevant suggestions for policy and practice.

As background for our synthesis, we adopt the socio-cultural ecological perspective introduced in Chapter 3 combined with Hart’s approach to the social workplace learning continuum. However, prior to presenting our synthesis, it is worth recalling some basic concepts relating to adult education. Since the 1970s the expression ‘adult education’ refers to “the entire body of organized educational processes, whatever the content, level and method, whether formal or otherwise, whether they prolong or replace initial education in schools, colleges and universities as well as in apprenticeship, whereby persons regarded as adult by the society to which they belong develop their abilities, enrich their knowledge, improve their technical or professional qualifications or turn them in a new direction and bring about changes in their attitudes or behaviour in the twofold perspective of full personal development and participation in balanced and independent social, economic and cultural development” (UNESCO, 1976, p. 4).

This wide definition of adult education has since converged with the concept of lifelong education meaning that all educational processes are understood as being carried out within the context of lifelong learning or adult education (Martínez de Morentin de Goñi, 2006, p. 13). Another defining characteristic of adult education is its inclusive nature. The same UNESCO declaration (UNESCO, 1976) states that adult education:

- “should meet […] the specific needs of development, of participation in community life and of individual self-fulfilment. […] In defining the content of adult education activities priority should be given to the specific needs of the educationally most underprivileged groups” (p. 7).

During the 1990s, the concept of lifelong education was expanded through the addition of the specification ‘for all’: lifelong education is for all.

Briefly, the concept of adult education includes:

(a) the idea of education as a permanent process converging with lifelong education;
(b) the emphasis on the social, economical and cultural development of the person;
(c) the need for increasing inclusion and participation of disadvantaged groups through the education for all.

With this in mind, in the following sections we will attempt to identify strengths and weaknesses of our scenarios in practice in order to derive implications for practice and policy for mobile learning and adult education.

Scenarios in practice: Strengths and Weaknesses

Looking at Strengths

Mobile devices as cultural/learning resources. Viewing mobile devices as cultural/learning resources opens the doors to a vision that considers them not so much for their technical functionalities but for the role they may play in people’s everyday life as strategic tools for identity formation, social interaction, the derivation of meaning, and entertainment (Pachler, Cook, Bachmair, 2010). People appropriate mobiles according to their personal needs of socialization and deriving meaning. It is the recognition of people’s agency in this media appropriation process that allows us to qualify media as cultural resources. This recognition in turn is a starting point to transform a cultural resource into a learning tool, particularly with disadvantaged people who are often at the margins of formal educational settings and need to be more motivated than others. In this perspective, mobile devices can provide multiple learning opportunities such as: (1) supporting...
exploration and widening the learning context; (2) enhancing self-expression and self-representation; (3) enabling media production; (4) supporting social networking and connections. We experienced the benefits of mobiles for learning in more than one situation. The German scenario, for example, focuses on the learners acting as “experts in their everyday world”: through the use of digital cameras and geo-location services, participants were encouraged to explore and map the places where they live and their daily lives, choosing situations relevant to them. In the Italian scenario, the production of a professional presentation was made entirely with smartphones, which integrate multimedia functionalities and editing in a unique application.

Inclusion and Participation. A key factor for the inclusive potential of mobile technologies is that their high level of penetration appears to range wide across various socio-economic backgrounds. The penetration of mobile phones and smartphones is now reaching saturation in Europe (ITU, 2011) with high levels of spread also among migrant populations. On the one hand, this phenomenon could be explained as a result of the affordable cost of these tools; on the other hand, it is likely an effect of their high social desirability: the new frontier of consumption as a manifestation of status (Merchant, in press). However, what we want to emphasize is something that goes more in depth than possession, that is, the high degree of personalization of mobile devices and their level of penetration in everyday life: mobile devices, and mobile phones in particular, are highly individualized, and always available in physical proximity to the subject. Such a rate of penetration as well as this highly individualized form of appropriation can make mobile technologies a factor for inclusion and participation, enabling access to social networks and cultural resources and supporting forms of self-organized personal learning.

Obviously, as personal styles of appropriation and diverse advantages of different devices enable different uses, it is rather common to encounter, in the same group, people with very divergent levels of mobile expertise. At the moment, it is likely that young people exploit the potential of mobile technologies more than adults. However, the varying levels of mobile expertise between young people and adults should not necessarily be seen as a problem, as this seems to encourage discussion and the exchange of experience and skills both among peers and generations. Such an approach, for example, was clear in the German workshop, which involved some elderly people: the diversity of technical skills was balanced out not only by the direct intervention of the media educator, but also through a spontaneous process of mutual help and support between young adults and older people.

Bridging the formal and informal. A further strength of using mobile devices is that it enables linkage of different learning contexts: when cell phones are used in formal learning situations, it becomes possible to capitalize on the skills acquired by individuals in their daily lives, and enhance them in new ways. The boundaries usually drawn between formal and informal contexts become discontinuous, making possible the exchange of knowledge and skills, with positive effects on motivation and involvement of individuals. In such a way, at the centre of the learning process there is no longer the rigidity of institutional structures, but the subjects and their actual experience, creating a more flexible and appealing user-generated context. The process of bridging formal and informal learning through mobile technologies is relevant especially in the case of school-based situations: the mobile media skills of young people can be included in the classroom and granted a new significance, so that they can be exploited. We consider as an example for this process the British scenario, where the creation of a mobile portfolio was directly related to the exploration of the vocational training setting and the reflection on personal learning styles.

However, we must recognize that the success of this bridging effort cannot be taken for granted. To propose that learners use their personal media within formal educational contexts may be of interest for the learners, but can also upset them and evoke forms of resistance, especially among those subjects who feel a strong disaffection towards formal contexts. Bridging the formal and informal means re-interpreting spontaneous forms of appropriation and media use in a more explicit and reflective way, and this effort requires high levels of involvement and attention.

Looking at Weaknesses

Technological divide. Despite mobile devices and the internet being so widespread, people maintain very different levels of access to technologies. Mobile phones come with many different levels of complexity, some are characterized by very basic functions whilst others support multimedia applications and internet navigation. Obviously, people who have the latest models of mobile phone can access more services and undertake more varied activities through their tools. On the basis of our experience we cannot state that there is a correlation between an individual’s socio-economic background and the type of mobile phone they own (see e.g., Bachmair, 2007), but in the workshops we carried out, the option of multimedia communication through mobile phones proved to be less common than we expected.

For the most part, people, especially disadvantaged adults, didn’t have the latest generation of mobile phone and were unfamiliar with the use of sophisticated apps: their communication being primarily based on the use of voice and text messaging (SMS). In the first Italian scenario, for example, learners appreciated the reminders of appointments and tasks sent by SMS to their personal phones, but they were not able to exploit the potential of mobile multimedia communication, because their technological equipment lacked the necessary camera and internet connection. In order to explore the possibilities of creating real learning environments based on communication through mobile phones, we should use smartphones and exploit their potential for internet connectivity. But at the moment, not everybody can afford such a solution.
**Implications for practice**

**Implications and recommendations**

To this definition, digital competence not only includes simple procedural skills, but also encompasses high-level abilities in logical and critical thinking, to high-level information management skills, and to well-developed communication skills. At the most basic level, ICT skills comprise the use of multi-media technology to retrieve, assess, store, produce, present and exchange information, and to communicate and participate in networks via the Internet. According to this definition, digital competence not only includes simple procedural skills, but also encompasses high-level abilities in logical and critical thinking, information management, and communication. 

Studies on factors influencing digital skills levels demonstrate that socio-cultural variables have a strong impact on them (DiMaggio et al., 2004). If we consider the contextual, cultural, and knowledge resources available to individuals and groups, the digital divide would therefore be the consequence of pre-existing inequalities, defining the gap between users and non-users of ICT. Coherent with this framework, one of the issues that emerged during the workshops of the MyMobile project was the contrast between participants’ expectations and their actual technological skills. Indeed, even though all believed in the great potential of digital technologies, it seems that current gaps in knowledge and skills make technologies a barrier rather than a driver for democratic access to communication and information.

**Motivation and expectations.** As is well known, motivation and expectations have a high impact on people’s agency and self-esteem. The use of technologies in a learning and social process can play an important role in reshaping motivation and expectations with implications for people’s self-perception of their capacities and skills. This should bring us to pay great attention to such dimensions and to the delicate mechanisms that they generate. From this perspective, the experiences gathered in the national workshops highlighted two very important aspects relating to motivation, attitudes and expectations towards the use of mobile technologies. Firstly, it seems that in the case of individuals with a low level of digital competence (particularly with disadvantaged adults) the use of new technologies is often accompanied by a high level of expectations. So, training programme promoters need to try to manage these expectations. But at the same time, they should try to modify attitudes that lean towards a naive technological determinism. Therefore, gradual media appropriation processes must be encouraged by developing socio-technical skills and monitoring cognitive overload.

Young adults tend to use new technologies with high levels of enthusiasm and a strong interest in exploration, but they seem to lack the ability to reflect on or assume a critical distance toward these technologies. Moreover, as mobiles are usually viewed as entertainment tools or as tools for interpersonal communication, resistance to their re-definition in the workplace can emerge. This is the case in the Belgian scenario, where mobile devices were presented as an easy tool to connect trainers in an online learning environment, which did not meet with participants’ approval. One strategy to deal with this difficulty consists in explaining the benefits of the unfamiliar media practices suggested, thus leading young adults to a more flexible use of digital media.

**Digital skills and competence.** As shown by research on the digital divide (van Dijk, 2005), digital inequalities between people depend not only on having or not having access to ICT, but also on their ability to effectively use it. In this perspective, emphasis should be placed on improving the use of ICT and related skills rather than on increasing the quantity of technological equipment. The concept of “digital literacy or competence” emerges as fundamental: this competence “involves the confident and critical use of electronic media for work, leisure and communication. These competences are related to logical and critical thinking, to high-level information management skills, and to well-developed communication skills. At the most basic level, ICT skills comprise the use of multi-media technology to retrieve, assess, store, produce, present and exchange information, and to communicate and participate in networks via the Internet”. According to this definition, digital competence not only includes simple procedural skills, but also encompasses high-level abilities in logical and critical thinking, information management, and communication.

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**Implications for practice**

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The analysis of the scenarios and their practical implementation allows us to make some suggestions for practice and design. These suggestions may be grouped around some of the points made by Hart (2012, see Chapter 3) applied to the context of mobile learning.

- **Think ‘learning spaces/places’, not ‘learning rooms’**. Mobile learning means, first of all, learning everywhere and this in turn requires conceptualising the learning environment as a ‘learning space’ rather than a ‘learning room’. Whilst a ‘learning room’ is a finite and fixed place with a limited number of resources, a ‘learning space’ is an open context of learning where the learner generates his/her own learning paths. In other words, mobile learning is based on users generating their own context for learning. All these considerations have relevant practical consequences for design. Indeed, the focus should be put on learners rather than content by providing the learners with a scaffold and support in order to enable them to manage their ‘learning space’. To a certain extent, we can say that designing mobile learning means – amongst other things – to design effective metacognitive tools for increasing the learner’s agency in an open, rich, authentic context for learning.

- **Think ‘activities’ not ‘courses’**. Considering that mobile devices are mainly viewed by users as informal and personal tools to be used in daily life, they could hardly be seen as a means to deliver formal courses. As Laurillard (2007) underlines, mobile technologies render digitally-facilitated site-specific learning activities possible, that is, they can teach about the world while you experience it in a completely contextual manner. This brings us to suggest that, when designing mobile learning, designers should think ‘activities’ rather than ‘courses’. These activities can be conceived as triggering inputs for learning or as stimuli for re-definition and learner empowerment. On the one hand, they should play on learner agency and his/her being an expert user of media in everyday life. On the other hand, they should suggest unexpected practices of re-definition or re-signification to generate learners’ transformation and change. Types of mobile learning activities suggested in the scenarios are indicated in the following tables with references to mobile everyday practices.

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2. For further analysis see: Caluiri, Fili, Ranieri & Pici (2012).
Mobile uses and mobile learning activities

<table>
<thead>
<tr>
<th>Mobile uses</th>
<th>Mobile learning activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Accessing web information and navigation</td>
<td>• Information problem solving within the context (inquiry)</td>
</tr>
<tr>
<td>• Recording pictures and videos of friends and personal experiences</td>
<td>• Creating a self-presentation or a digital storytelling (identity formation)</td>
</tr>
<tr>
<td>• Taking and sharing pictures of holidays, places, surroundings</td>
<td>• Creating and sharing maps and geo-tagged contents (exploration and widening learning context)</td>
</tr>
<tr>
<td>• Documenting learning/working experiences</td>
<td>• Creating portfolio and multimedia resume (awareness and empowerment)</td>
</tr>
<tr>
<td>• Connecting with people (social mobile networking)</td>
<td>• Participating in mobile learning groups or communities (participation and engagement)</td>
</tr>
<tr>
<td>• Arranging meetings, navigation and micro-coordination</td>
<td>• Organising learning activities</td>
</tr>
</tbody>
</table>

- The table is partly adapted from Merchant (in press).

Think ‘continuous flow of activities’ not just ‘response to need’. As we all know, learning is a continuing process. Some benefits of mobile phones such as, for example, ‘portability’ and ‘ownership’ seem to be particularly appropriate to support this idea of continuity in learning. As pointed out by Laurillard (2007), the ownership of devices, which characterizes mobiles, entails a higher degree of control of learning that facilitates continuity between contexts and continuity of learning. From this perspective, the design of mobile learning should respond to this expectation of continuity and activities should be planned as ‘continuous flow’ rather than ‘discrete experiences’. This is particularly true for adult learners, as the emphasis in adult education is on the full and global development of the person.

Implications for research

The MyMobile project was not aimed at developing new theories or gathering empirical data on mobile learning in adult education. However, in order to transfer knowledge and develop scenarios, the partnership began reflecting not only on practice but also on research issues and questions in this field. As already stated in Chapter 3, research on mobile learning and adult education is very scant and there would be a number of topics that should be investigated. Although we did not reflect systematically on research gaps in the field, the analysis of our experiences brought us to identify at least three research areas that deserve more consideration.

Mobile learning and cultural practices in adults’ everyday lives

Although the history of mobile learning goes back to the 1980s (Kukulska-Hulme et al., 2008), until now an emphasis on technical aspects has prevailed whilst pedagogical and cultural issues remain underexplored. Although recent approaches to mobile learning have shifted the focus from the mobility of the devices to the mobility of students and the context of learning (Sharples, 2005) in addition to concepts of agency, structure and cultural practices (Pachler, Bachmair, Cook, 2010), an emphasis on technologies as driver of change is still dominant (Selwyn, 2011). We believe that more attention should be paid to the interplay between mobile technologies, cultural practices and learning opportunities, especially in the field of adult education. Indeed, if mobile devices are understood as cultural and learning resources, we need to better understand how adults appropriate them, especially considering the new forms of nomadism characterizing our contemporary societies. While we have begun to gain insight into mobile media appropriation processes among young people (see for example Caron & Caronia, 2007), we know much less about adults’ habits and practices — with some exceptions such as Licoppe & Zouinar (2009).

Research and development of Life Long Learning Apps (LLAs)

The market for apps is experiencing exponential growth, which runs parallel to the spread of smartphones and the consolidation of some operating systems such as Android and iOS. According to one recent survey (Nielsen, 2010), the most popular mobile apps are games, followed by maps and social networks applications, but the educational sector is also in constant expansion, so that all the main apps stores have a specific section for education and training. Educational apps are specifically designed for children and young people and they support learning on a variety of topics, such as mathematics, science, language and arts, with special attention also given to accessibility. However, to develop and implement apps for adults and older people, research must reflect and define instructional principles and methods that are appropriate to this specific target group. Learning on the move is a challenging activity which requires a learner able to self-manage his/her learning. Autonomy and metacognition are general requirements for effective learning but in the case of mobile
learning they are even more important. Therefore, research should pay attention to developing and providing a scaffolding to help people manage their cognitive load in ubiquitous learning environments. In this area, some suggestions may come from the Theory of Cognitive Load by Sweller (1988) and the Multimedia Learning Principles by Mayer (2001). In particular, according to Mayer, learners learn better when they receive different stimuli (e.g. words and pictures) in a coherent manner (multimedia) and close to each other (spatio-temporal proximity); when irrelevant words and figures are eliminated, given that working memory has a limited processing capacity (material coherence); when unnecessary different formats are not used (redundancy) and an informal, conversational style is used (personalization).

**Mobile devices for community building: what is the impact?**

There exist a growing number of projects based on the use of mobile devices, particularly mobile phones, to favour and support community building in remote locations lacking infrastructures for physical mobility. Although this is a relevant topic for its social implications, there is little research on the social impact of mobile learning, especially in the context of disadvantaged people. Evaluation of the effectiveness and the impact of an innovative learning activity is always complex. Scholars such as Huberman (1973), who dedicated most of his research activities to the evaluation of educational innovation, show how manifold variables, attributed to individual psychology, interpersonal and collective relationships, institutional and organizational aspects, local and national political decisions and so on, come into play. The levels involved are, therefore, multiple and it is not always easy to deal with this complex web of links and relations.

The matter becomes even more complex when dealing with mobile learning. Scholars who have dealt with this issue emphasize that research in this regard is still underway and requires further efforts (Traxler, 2007; Arrigo et al., 2008).

**Implications for policy**

Adult education is an ongoing process. Adult education relates to the social, economic and cultural development of the person. Adult education is education for all, especially for disadvantaged groups. Given these expectations and considering the barriers we have experienced through the implementation of our scenarios, what are the implications for policy and lifelong learning? We don’t have enough data to derive strong final recommendations for policy on mobile learning and adult education. We just conclude this chapter by underlying three main points for further consideration and policy making:

1. Research in the field of mobile learning and adult education. Investments in research on mobile learning and adult education is limited. But, as indicated in the previous paragraph, there are several areas of interest that deserve consideration and this requires a strong engagement of public institutions in funding research activities and projects in this field.

2. Provision of technologies and promotion of digital/media literacy. As we have seen through the analysis of our experience, the technological divide and lack of literacy still impact negatively on learners’ experience of learning and knowing. Although digital innovation has to do more with social practices than with technologies, the lack of material infrastructures and cognitive skills is a factor of exclusion that public institutions must counteract for the future.

3. Developing mobile services for adult learners. There is an increasing interest in the development in mobile services for the public sector. For example, the International Telecommunication Union (ITU) in collaboration with the Organisation for Economic Co-operation and Development (OECD) and the United Nations Department of Economic and Social Affairs (UNDESA) has recently published a study on the economic and social impact of the use of mobile technologies to foster m-government 4 and transform public service delivery (OECD–ITU, 2011). The document states that:

> “M-Government is not intended to eliminate existing on-line and off-line modalities of service delivery, but it affords powerful and transformational capacity to the public sector not only by increasing access to existing services, but also by enabling the design and delivery of new services (e.g. through new levels of civic engagement in policy development and democratic decision-making)” (OECD-ITU, 2011, p. 12).

From this perspective we believe that new mobile services for distributing training should be designed and implemented to support lifelong learning and adult education for all. Research in this area and supportive policies would be crucial to the development of an equal and democratic society today.

**References**


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4 In this document M-Government is defined as: «the adoption of mobile technologies to support and enhance government performance and foster a more connected society» (OECD-ITU, 2011, p. 12).


Traxler, J. (2007). Defining, Discussing and Evaluating Mobile Learning: the moving finger writes and having writ...The International Review of Research in Open and Distance Learning, 8, 2.
