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Inventing and re-inventing identity: Exploring the potential of mobile learning in adult education

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Abstract This article explores the potential of mobile learning in adult education with a particular focus on identity formation and self-representation. It draws on the mobile learning experiences implemented within MyMobile–Education on the move, a European project (2010–2012) whose main purpose was to develop guidelines for mobile learning in adult education. This was achieved through a series of national workshops aimed at testing the use of mobile devices as cultural and learning resources for identity (trans)formation by and social empowerment of adults. In this context, the article addresses two particular cases: workshops conducted in Italy and Britain. It begins with a discussion of the concepts of adult education in relation to mobile learning and identity formation, and then moves to an analytical description of the workshops, exploring participants' self-perceptions and productions. Based on this exploration, it concludes with a reflection on the extent to which adult learners' participation in the mobile learning experiences that the project designed for them supported the formation and development of their identities; it also offers some recommendations for future research in the field.

Keywords Mobile learning · Adult education · Identity formation · Self-representation · Self-narrative · Lifelong learning · Italy · United Kingdom · Social empowerment

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Over the last ten years, an increasing number of mobile learning projects has been addressing adults, including both young adults and older people (Dillard 2012; Frohberg, Göth, and Schwabe 2009). The potential of mobile devices to support adult learning has been explored in a variety of contexts. Several studies have investigated the impact of mobile phones on learning outcomes in adult learning programmes among rural populations and poor communities in developing countries (Aker, Ksoll, and Lybbert 2012; Balasubramanian, Thamizoli, Umar, and Kanwar 2010). Others have examined the use of mobile devices to support intentional informal learning among experienced users (Clough, Jones, McAndrew, and Scanlon 2008) or the delivery of micro-contents through very simple mobile phones to fulfill the learning needs of lifelong learners (Gu, Gu, and Laffey 2011). Mobile phones have also been used to provide access to contextually relevant information in clinical education (Hann 2012), to create digital narratives to be used in adult education (Herrington 2009), and as vehicles for interactive museum guidebooks (Sung, Chang, Hou, and Chen 2010). In addition, several studies have focused on developing assistive, mobile, experiential language-learning applications to support daily literacy education anywhere and at any time (Lumsden, Leung, D'Amours, and McDonald 2010; Munteanu et al. 2011).

Two main, and related, factors may help explain the increasing interest in mobile adult education. On one hand, the past ten years have witnessed the global spread of mobile phones not only among young people but also among adults and older people. For example, in the United States, the majority of adults (85%) have mobile phones and 45% of them own smartphones, which are particularly popular among young adults (66%) and mature people (59%) (Rainie 2012). Similar statistics are also emerging in Europe. Ofcom (2012) reports that in the United Kingdom almost all adults (92%) owned a mobile phone in 2011 and two in five adults (44%) used a smartphone. In Italy mobile phones are also attracting the interest of older people; 75.8% of families with only people aged 65 and over own a cell phone, while the percentage of young and mature adults accessing the Internet through their smartphones is growing continuously (e.g., 41.20% of people aged 20 to 24 and 28.10% of people aged 35 to 44, according to ISTAT 2012). With such penetration, it is not surprising that mobile devices have captured the attention of researchers and educators willing to explore and test their potential as tools that can support teaching and learning experiences. Mobile phones can indeed be seen as personal resources always available to individuals to access information, take pictures, share content, and stay continually connected to other people.

On the other hand, some studies suggest that mobile technologies have a positive impact on lifelong learning (Agrusti et al. 2008; Carril et al. 2008) and social inclusion (Arrigo, Kukulska-Hulme, Sanchez, and Kismihok 2013) by increasing participation in learning, expanding learner choice, and favouring flexible or personalised learning programmes. Furthermore, mobile technologies may reach learners who are often overlooked by traditional forms of technology-enhanced learning.

Despite the increasing interest in using mobile devices to support adult learning, however, to date relatively little systematic research has been done on mobile learning in the context of adult education and lifelong learning. With the exception of mobile work-based learning, where a range of (research) projects are being conducted and reported on (see, for instance, Laxman 2009; Pachler, Pimmer, and Seipold 2011; Pimmer, Pachler, and Attwell 2010), the research in the wider field of mobile adult education is still fragmented, and whether and how such devices can be used in the pursuit of learners' own goals is still under investigation.

It is within this context that we explore the potential of mobile learning in adult education with a particular focus on identity formation and self-representation. We draw on the mobile learning experiences implemented within MyMobile–Education on the move, a

European project partly funded under the Grundtvig programme in 2010–2012, by a transnational partnership including four countries: Germany, Belgium, Italy, and the United Kingdom. The main purpose of the project was to develop instructional strategies and guidelines for mobile learning in adult education. To achieve this purpose, the partnership designed and implemented a series of national workshops aimed at testing the use of mobile devices as cultural and learning resources for identity (trans)formation by, and social empowerment of, adults (see Friedrich, Ranieri, Pachler, and de Theux 2012).

We begin by discussing the concept of adult education in relation to mobile learning and identity formation. From there we move to a description of the study, focusing on two particular cases: workshops conducted in Italy and Britain. Both were carried out in 2011, addressing younger and older adults from disadvantaged backgrounds and engaging them in creating personal digital artefacts such as a multimedia curriculum vitae (CV) or a photo diary. We provide an analytical description of the workshops and explore the participants' self-perceptions and productions. We then discuss the extent to which adult learners' participation facilitated the formation and the transformation of identity, and conclude with some recommendations on future research directions.

Theoretical framework

Adult education, lifelong learning, and the "ability to be"

Since the First International Conference on Adult Education, organized in Denmark by UNESCO in 1949, the concept of adult education has been associated with the notion of education throughout the life course (Centeno 2011). Echoing the pioneering conceptualizations on these topics proposed, for instance, by Lindeman (1926), who problematised the "additive style" of the educational system and interpreted education as a "lifelong process", UNESCO (1949) offered a first understanding of education across the lifespan as an educational conception aimed at adults; it also recommended international cooperation in the field. Later UNESCO conferences have lead to an evolution of the understanding of adult education aims. From being seen as promoting the emancipation of only certain groups of the population, adult education has increasingly been debated within a larger perspective (Centeno 2011), thus reinforcing its strong connection with lifelong education and its role of meeting the needs for development and participation in community life of the most underprivileged groups (UNESCO 1976). In the latest official UNESCO (2010) document on the topic, adult education is seen as a key in the economic, political, and cultural transformation of individuals, communities, and societies in our century, although the document also underscores the increasing difficulty of defining the notion of adult, which is culturally and socially sensitive in a global society, and the meaning of learning, which is not obvious at all.

Briefly, the institutional concept of adult education includes three main components: (a) the idea of education as a permanent process converging with lifelong education; (b) the need to increase the inclusion and participation of disadvantaged groups through lifelong education for all; and (c) the emphasis on the social, economic, and cultural development of individuals and societies.

Moving from the institutional context to a theory of education, it must be noticed that there is no one theoretical model of adult learning but instead a mosaic of theories, among which two have been particularly influential in the last century: andragogy and self-directed learning (SDL) (Merriam 2001). Andragogy was first proposed by Knowles (1968), who contrasted it with pedagogy and pointed out that adult learners have intrinsic motivation, the ability to

direct their learning, and an interest in immediately applying new knowledge. Subsequently, Knowles partly revised his view and shifted his focus to the continuity between pedagogy and andragogy, where pedagogy was understood as teacher-centred and andragogy as learner-centred. Nevertheless, whilst we recognize the traction these ideas have in some of the adult learning literature, we remain sceptical about the need for a separate concept for adult learners. Although young and adult learners differ in certain ways, for example in their cognitive development and levels of maturity and life experience, we would question whether adults and young people really learn differently, for example in terms of their neurological processes, and, as a consequence, should be taught differently.

The second influential approach is SDL, which is characterised in various ways depending on the philosophical orientation of the scholar (Merriam 2001). For example, in the humanistic tradition self-directed learning aims at developing the learner's capacity to be autonomous (see, for instance, Brockett and Hiemstra 1991), while from the perspective of transformational learning as presented by Mezirow (1991), critical reflection on the historical, cultural, and biographical reasons for one's needs and interests is at the centre of adults' learning processes.

Though andragogy and SDL provide different conceptual models for adult learning, both have been criticised for focusing exclusively on the agency of individual learners, while ignoring the social structures that inform the contexts where learning occurs (see, for instance, Sandlin 2005). Considering the limits mentioned above, we need to look at further theoretical perspectives to better articulate the conceptual link between adult education and lifelong learning. In adult education research, lifelong learning has often been invoked as a means of responding to the fast-changing needs of the postmodern condition, where individuals are confronted with dynamic and unpredictable experiences and it is no longer enough to understand learning as merely a process of knowledge acquisition (see, for instance, Edwards and Usher 2001; Su 2011). Since learners are indeed immersed into an ever-changing world, the acquisition of static knowledge transmitted by the teacher or the trainer is no longer sufficient for learners to make sense of their dynamic experiences of the world—if it ever was. In other words, content delivery as the dominant paradigm is no longer appropriate, a point argued by constructivist approaches to learning from Vygotsky (1931/1978) to von Glasersfeld (1995). To face the challenges of uncertainty and change in "liquid" modernity (Bauman 2000), learners require flexibility, and need to develop a dynamic ability to make sense of knowledge so they can deal with perpetual change. Su (2011) exhorts us to consider this dynamic ability as "the foundation for the transformation and development of adult learners into lifelong learners, whose true role and ultimate purpose is not simply to learn to know but to learn to 'be'" (p. 58). This idea of lifelong learning as an "ability to be" relies on Heidegger's notion of "being-in-the-world" and suggests a need to focus on "cultivating adult learners' dynamic abilities to be actively engaged with their thinking, acting, and feeling and thus to live authentically as well as flexibly in the face of change" (p. 68).

Thinking of the "ability to be" in lifelong learning brings us to focus our attention on the notion of identity formation in adulthood. Studies on this topic are not common (Fadjukoff 2007), probably because Erikson's (1968) theory of personality, with its eight stages of psychosocial development, has prevailed in relevant research, and identity has been conceived of as a process that is largely completed when individuals enter adulthood (Hoare 2009). Today, constructivist models explain identity formation as a process that continues across the lifespan; they emphasise the influence of the context on developing adults, a context that continues to change over a lifetime (Sinnott 2009). From this perspective, we can see identity as, in Giddens's (1991) phrase, a reflexive project: an activity

that we work on continuously and through which we engage in constructing a coherent biographical narrative.

Adult education and mobile learning: Some considerations

If lifelong learning provides the context for reflecting on adult education and lifelong learning is understood as an ongoing education process across the lifespan, wherever and whenever one may be, then mobile devices can be viewed as legitimate tools for adult lifelong learners. In his analysis of the convergence between lifelong learning and personal technology, Sharples (2000) observed that

> Just as learning is now regarded as a situated and collaborative activity, occurring wherever people have problems to solve or knowledge to share, so the major advance of the 1990s has been in mobile networked technology, enabling people to communicate regardless of their location. Computer technology, like learning, is ubiquitous. (p. 179)

Indeed, as smartphones are becoming increasingly affordable, more and more learners constantly have at their disposal computing devices that are personally owned and very technically capable. Now services and functions converge in a single device that is ubiquitously linked to online repositories, services, databases, and networks. These technological developments coincide with significant transformations in other areas of life: society, culture, media, education, economy, etc. Key features of these transformations are the increase in provisionality and fragmentation as well as the individualisation of risk-taking, and a new learning habitus, all of which are intimately linked with the growing importance of mobile phones. Paradigmatic changes in the world of media, like the shift from a push to a pull model, mean that device users have growing agency in decision making and far more choices, for example in their access to information. At the same time, these changes transfer responsibility for initiative to the users/learners and require that they become familiar with the wealth of information on offer and make use of the opportunities available (see Pachler, Bachmair, and Cook 2010).

Our understanding is bound up in a view of learning as a reflective appropriation of cultural resources. Appropriation is a process of internalization of, and externalization into, the pre-given world of cultural resources and these cultural resources are inter alia used as semiotic resources for representation and meaning making in and of the world. In the context of learning, the emergence of such new media, with their new affordances, is particularly relevant for the capacity traditionally described as literacy: the ability to use and produce signs to make meaning (see, for instance, Bachmair and Pachler 2013; Pachler et al. 2010). In short, we see mobile devices as affording contexts for human development and learning. Indeed, user-generated contexts can be viewed as a key affordance of mobile devices used for learning. These devices enable users to create synergies across knowledge distributed across people, communities, location, time, social contexts, sites of practice, networks, systems, etc.; they can then negotiate a mutual understanding of learning situations with others with whom they are affiliated in increasingly loose configurations. Mobile devices not only enable users to transcend the limitations of their immediate physical environment, but they also facilitate external representations of knowledge through social interaction and the augmentation of internal conceptualisations of knowledge.

However, the use of mobile technologies for (lifelong) learning (Seipold et al. 2014) is not obvious and no standardised concepts exist for their systematic use in education. Mainly because mobile technologies and their functions are designed for communication,

entertainment, and consumption, they are first and foremost related to aspects of learners' everyday lives outside of educational contexts. This does not mean that the use of these devices, their functions, and their content in these contexts is un-reflected. Quite the opposite: our everyday use of technologies is intentional. Everyday use—whether making appointments with friends or accessing the Internet with its social networks—includes much more than just communication, entertainment, and consumption. As we use mobile technologies, we communicate, structure, organise and order, plan, network, furnish information, assess, evaluate, and produce. In the process we are friends, managers, producers, journalists, reviewers, etc. The challenge is to acknowledge such activities taking place in everyday life as competences which are relevant to formal learning—and thus to relate formal learning and everyday life to each other in meaningful ways. One way to do this is to consider the structures in which people are acting, the structures they are constructing, and the competences and routines they are developing in the process. Pachler et al. (2010) provide a model of the socio-cultural ecology of these processes. Here, three points stand out:

- Structures are for example structures of mass communication and everyday life, e.g. learning environment, home, school, job, peers, leisure time. Learners navigate within, and use, these structures but they also produce structures of their own—an important and emancipating fact. Orienting oneself is as important as providing orientation.
- Agency means the ability to act in the world with all available structures and to appropriate these structures. One element of agency is that each individual has a subjective perspective on the world. This indicates that agency is affected by subjectivity. As a consequence, appropriation and learning are first of all and always subjectively meaningful.
- People develop routines through their activities; they construct cultural practices and relate them to the cultural practices of other people or institutions. These practices enable them to act confidently and safely in situations and within structures. Here it becomes necessary to acknowledge, for instance, the organisation of everyday life, networking, media reception and production or investigation competences of the learners in relation to formal instructional requirements and to make them available for learning.

The concepts of structures, agency, and cultural practices show us that engaging in media activity is an intentional activity, usually at a low level of reflection or consciousness, which also depends on the social and cultural situation in which one uses the media. These aspects may provide a fruitful background to reflect on what we might call "mobile lifelong learning". Indeed, while we know of no consolidated theoretical models that explain the relationship between mobile learning and lifelong learning (Arrigo et al. 2013), these components are important because they help us to understand that learners from different social milieus have different technologies and information available to them, different expectations and attitudes towards learning, etc. (Seipold 2012). This is particularly significant when we consider mobile lifelong learners, who are continuously facing the challenge of learning "to be" in a changing world, where any cultural resources may be relevant to them.

Research context and methods

To explore the connections between mobile learning, self-representation, and identity (trans)formation, our project utilised a case study approach. This method, which is based on analysing examples of real people in real situations, provides the opportunity "to understand ideas more clearly than simply presenting them with abstract theories or

principles" (Cohen, Manion, and Morrison 2007, p. 253) and to investigate how people make sense of their experiences in the complex and dynamic contexts where human relationships and events take place. In particular, with the aim of unlocking the potential of mobile learning to support (young) adults in (re-)forming their identity, the investigation focused on three questions:

1. To what extent can mobile devices support learning processes linked to self-representation and identity development?
2. How does the interplay between formal and informal contexts of learning, enabled by mobile devices, enhance the relationship between learners' informal experiences and their learning outcomes or competences?
3. Do learners' expectations and self-perceptions influence the way in which the pedagogical potential of mobile devices is deployed? If so, how?

With these questions in mind, we now examine two different cases from 2011, one each in Italy and Great Britain. They focus on the learning experiences of two cohorts of adults, who attended workshops in a series promoted within the European project MyMobile–Education on the move (2010–2012).

We collected data through formal and informal meetings, direct and indirect observations, interactions with participants, and focus groups. Some sessions were also video recorded and analysed together with the huge number of pictures produced during the meetings. In addition, participants created digital artefacts that were part of the data we analysed. We engaged in interpretive analysis, paying particular attention to participants' perceptions and motivations, and we considered the role the mobiles played in their experience as a personal resource for identity formation and self-representation. More specifically, members of our research team analysed the data by looking at three main categories, which we shared and negotiated through a series of virtual meetings: self-representation and identity (trans)formation, users' expectations and motivations, and the role of mobile devices. After the analysis, team members shared their reports and discussed them both online and through face-to-face meetings, to reach a common understanding of the data and to produce a narrative synthesis.

To guarantee that our results would be both trustworthy and credible (Lincoln and Guba 1985), we compared different data sources (observations, interviews, photographs, videos) and methods (observations at different times combined with discussions and conversations and focus groups) to ensure triangulation. Furthermore, to make our work even more accurate and credible, we asked the participants for their feedback through the technique of member checking, once during the data collection process and again three months later, at the end of the project.

In the two sections that follow, we describe the background and the structure of the Italian and British workshops and explore the learners' experiences. We use pseudonyms, but we do include some original pictures since they are inherently linked to the meaning-making processes that informed these learners' stories, aspirations, and self-representations.

Mobile resources and identity (trans)formation: The Italian case

The workshops

Using stories as a key to think and/or rethink identity is a very common practice in adult education (Rossiter 2002). Since narrative is a fundamental structure of human meaning

making (Bruner 2002) and the events of one's life can be fitted into narrative episodes, identity formation and reconstruction can be interpreted in terms of narrative structure. Recently, storytelling in adult learning is increasingly being combined with the use of new media; this combination is seen as particularly effective in the job search. In the knowledge society, telling stories linked to one's own professional experiences can become a useful tool to increase adults' personal awareness and visibility (Caminotti and Gray 2012; Malita and Boffo 2010).

Based on this premise, the Italian case focused on a particular application of digital storytelling: the production of a multimedia curriculum vitae (MCV) using mobile devices. An MCV is a short self-presentation aimed at highlighting an individual's skills and personality in a few minutes. As a short digital movie, it can also be easily distributed on the web and provide a preview for a job interview. Since individuals can always have their mobile phones available, they can use them to document their lives. In a sense, the phones can be seen as a digital archive of life, a memory that is always available and can be accessed easily and/or connected with the external world. The Italian workshops aimed at encouraging participants to use this huge archive of personal resources in a more reflective way: producing an MCV as a personal digital story for job purposes may indeed help people reflect on their experiences and identify the main message they want to communicate through the new digital communication tools. The researchers and facilitators involved in this project had previously used mobile phones for storytelling (Ranieri and Bruni 2013), and this activity built on that experience.

A first workshop, titled "Mobile 2.0 to support visibility and job searching", took place in Florence, Italy, during May and June of 2011. It involved 15 people aged 25 to 60 who were searching for a first job or having difficulties finding a new one. Mobile phones were mainly used to take pictures and to document personal aspects of learners' lives. PhotoStory 3 was used to implement the MCV activity. A second workshop, "Let's create a portfolio with mobile phones", took place in Cecina, a small town near Florence, in December 2011, and involved about 15 adults aged 35 to 50 and five undergraduate students. It was an advanced training course aimed at exploring the potential of mobile phones for self-narrative and self-representation. Mobile phones were used not only to capture snapshots of daily life but also to create a self-presentation with the digital storytelling app Storyrobe 1.0.

Some outcomes

At the end of the training activities several MCVs were created and the researchers collected several types of data. In the following section we provide an overview of our results, focusing on three specific examples that show the interplay between the process of identity (re)construction and the role of mobile technologies, through the lens of participants' experiences.

Example 1

Our first example comes from Paolo's learning experience. Paolo, age 64, who attended the first workshop, is a farmer in Tuscany with a small olive oil company; he decided to take the course to promote his small farm and his techniques of oil production. Though he had fairly limited experience with media, he was strongly convinced that the multimedia format was the best way to showcase the unique qualities of his products, and that the Internet was the right place to reach his potential audience. This mixture of strong

motivation, awareness of personal learning needs, and long professional experience led Paolo to participate with intense interest in the activity and to rethink his way of being a farmer in the digital era. Using his mobile phone with very basic features, he started retrieving old pictures of his daily life on the farm, collecting new snapshots, and selecting appropriate images. During the phase of developing ideas and selecting content, Paolo was particularly surprised to realize that he thought of his phone less as a tool for calling people and more as one for documenting his professional life. His surprise was followed by a certainty that mobile technologies can improve his social, professional, and personal life. As Paolo commented at the end of the training experience, "Using a mobile phone to promote myself across the web, to communicate my own ideas, and so on, is crucial. This is the future".

However, Paolo encountered some obstacles as he made the transition from the phase of design and multimedia selection to that of implementation; on several occasions he felt frustrated at his lack of technical skills. Compared to his vivid imagination and his high expectations, the actual process of translating his story into moving images was particularly demanding for him. "How do I move pictures from my mobile to my computer?" and "How do I resize this picture here?" were typical of the questions he asked. They mainly began with "how" rather than "what", indicating that, to him, the technological divide influenced his performance and results.

Example 2

Giulia's story is another significant example. Giulia is 60 and also attended the first workshop. She had worked in various fields, including tourism, animation, and counselling, and was planning to retire soon. She had always wanted to work in the arts, especially as a model, and was looking for new career opportunities. Fully aware that she was still a fascinating woman, she was motivated to start a new life trajectory, giving voice to her past aspirations and seizing the communication affordances of the new digital tools. Equipped with a basic mobile phone much like Paolo's, she dug up pictures from her digital archive, and also used the digital camera in her phone to scan in some old photos and take new self-portraits. In this process, she used her phone as a personal resource through which she reshaped the meaning of her memories as well as moving on in her life. Despite her limited technical skills, she demonstrated strong communicative abilities: adopting a concise and immediate style, she selected meaningful photos of past experiences, and made clear statements about her career aspirations and beliefs.

Through this experience, Giulia discovered the potential of her mobile phone as a tool for self-representation. At the same time, she clearly recognised her lack of technical abilities and the risk of underestimating the possible uses of mobile devices. Like Paolo, she strongly believed in the power of media, which she considered to be crucial in both her job and her social life. But she realized that using media confidently would take her quite a while. Undoubtedly, the process of creating a concrete product had a positive impact on her self-esteem and digital self-efficacy. All the participants agreed on this.

Example 3

Our third example comes from the second workshop. Yan was a 25-year-old Chinese woman attending a post-graduate course in adult education at the University of Florence; she had been in Italy since 2010. One of the main barriers in her encounter with the Italian culture was language. Although she could read and write Italian well, she had difficulty in

listening and speaking—with negative consequences for communicating and socializing. Indeed, during the workshop, Yan admitted she was lonely and homesick. But she was an expert on mobile applications and very soon became the leader in the group by helping other participants use the suggested app to create their digital stories. Yan started reflecting on her recent story of being a student from China in Italy, and translated her reflections into images and voice recordings. Using her smartphone, she selected existing pictures stored on her device and also gathered some new pictures by taking shots of her phone screen (see Figure 1). Very quickly, she created a complete audio-visual artefact and her feelings of self-efficacy increased.

Yan's most intriguing experience was not the digital production itself, but the opportunity she had to rethink her experiences across cultures. In particular, as she said in her digital self-presentation, through her visit to Italy she understood the multiple existing perspectives on education and the differences between education systems in the East and West. She also expressed her intention to treasure these discoveries once she was back in China to continue her studies and research. In this way, Yan assumed a wider perspective on her life by looking at her digital artefacts from an unexpected perspective and connecting the fragmentary snapshots of her existence into a consistent and meaningful mosaic.

Mobile images as a bridge between personal learning themes and formal learning: The British case

The workshop

The workshop in Great Britain addressed young adults who are potentially at some distance from formal education; this group is normally described as NEETs (not in education, employment, or training). The participants were a group of media studies students aged 17 to 22 at a college of further and higher education in West London who were beginning their second year of study. The workshop was independent from their course and took place outside of term time. Participation was voluntary; as incentives, the participants received both a gift voucher and lunch vouchers. The workshop ran for two days in September 2011, a week before the regular start of term.

The aim of the workshop was for participants to produce an individual photo diary that could help them, as potentially at-risk learners, to identify personal learning themes and to match themselves with learning opportunities offered in a formal learning environment. The project built on prior work by the London Mobile Learning Group (www.londonmobilelearning.net).

At the beginning of the workshop participants were invited to investigate the college campus in three groups and to take interesting, preferably striking, photos with their mobile phones. Those who did not have a mobile phone were loaned a digital camera. They produced a portfolio with two elements: a personal diary, and artefacts with some relationship to formal learning outcomes. The workshop also aimed to explore the mobile media habits of the target group and their perceptions about the usefulness of their mobile expertise in relation to their habitus of learning. With the phrase "habitus of learning", we specifically refer to a disposition that amounts to constantly seeing one's life-world both as a challenge and as a potential resource for learning (see Kress and Pachler 2007).

At the end of the workshop each participant received a printed T-shirt with a personalised image, which they had either taken during the workshop, brought from home, or

Fig. 1 Three screenshots from a mobile presentation

downloaded from the Internet. The group that planned and led the workshop consisted of two facilitators from the college and one external facilitator, a member of the project team who is an expert on mobile learning. The lead facilitator also produced his own mobile portfolio. The aim was to enhance the reflexivity of both participants and facilitators by setting up conversational threads between them through the sharing of portfolio artefacts (MyMobile–Education on the move 2013).

Design features

The course's didactic design focused on situated learning; it aimed to offer learners situations in which they could construct their own knowledge. Rather than instructing learners, the facilitators generally provided situations in which they could learn. The situated learning in the workshop was based on a group investigation of the college campus as a learning environment; the intended outcome was a group presentation. The artefacts resulting from the group work were presented with the help of Prezi, cloud-based presentation software.

Three kinds of tools supported the participants in learning through knowledge construction: mobile phones/cameras, computers, and, importantly, the widening of the classroom context through a "photo safari". The situated learning was framed by the college site, and its structures and cultural practices. However, the participants also accessed Facebook and used their mobile phones to bring external knowledge into their groups. This access to the Internet through mobile phones or the computer bridged the two contexts: the college and the outside world. Thus the mobile phone functioned as a bridge between formal contexts and home/out-of-school contexts.

The T-shirts had the function of providing a visible and concrete goal for the first day of the workshop. They were also intended to offer a bridge to youth culture and the young adults' leisure time, and they supported the situated learning.

The participants were invited to bring into the workshop their informal learning and their connections to sites and contexts beyond any formal education and training. As a first step in widening the learning context, the workshop facilitators welcomed the participants' personal mobile devices into the college as tools for learning during the workshop.

Relevant contexts for learning were peers, families, youth culture, and social websites such as Facebook and YouTube. Personal expertise from these or other contexts was considered to be relevant for learning.

In addition, the facilitator shared his photo portfolio so the participants could identify, and observe, contexts from everyday life that are relevant for learning and expertise.

Some outcomes

The images chosen for the T-shirts, as well as those included in the Prezi presentations, show some of the interesting ways in which the participants brought together their learning in formal contexts with the family and peer context of home and the Internet, and their media context. Above all, their personal expertise is visible in the images that the participants and facilitators took and used.

The images shown in Fig. 2 are representative of many others from the workshop. They reveal a specific personal expertise, one with little obvious relevance to formal education. The image on the left comes from a participant's Facebook page and shows him as a dedicated dancer. The middle image was taken by a participant as the group investigated the campus, and demonstrates his competence in identifying a still life, one genre of fine art. One participant brought the image on the right from home; in it, she portrays herself as a fan of Manga cartoons.

Successful learning can be seen to align with what Kress and Pachler (2007) call an "individual habitus of learning". As Pachler et al. (2010) describe it, participants' habitus of learning is characterised by

- self-representation (see, for example, Facebook, YouTube etc.),
- play (usually just typical of pre-school learning and informal learning), and
- target orientation (central to school instruction).

The workshop aimed to give these young people at some distance from formal education (NEETs, at-risk learners) the opportunity to gain a new and positive understanding of learning in the context of formal education. The project team believes that the key to the participants successfully gaining such a new and positive understanding was their ability to harness their workshop experiences with their informal learning in everyday life. The mechanism to achieve this was the mobile phone or smart phone, a normalised cultural resource in their everyday lives. By using the phone, they could bring elements of their informal learning into the formal education context. Informal learning is based on participants' habitus of learning, which in turn is characterized by the way they prefer to interrelate their self-representation, play, and target orientation. Therefore, a central feature of the workshop design was connecting their habitus of learning with specific patterns of self-representation, play, and target orientation within the typical features of facilitator-guided formal instruction.

Discussion

It is commonly recognised that participation in adult education is positively associated with learners' previous educational, employment, and social experiences (see, for instance, Boeren, Nicaise, and Baert 2010). Human and social capital are considered to be predictors of learners' success and participation in learning activities. Whilst these factors remain crucial, the learning experiences we described above seem to suggest that the connections are less

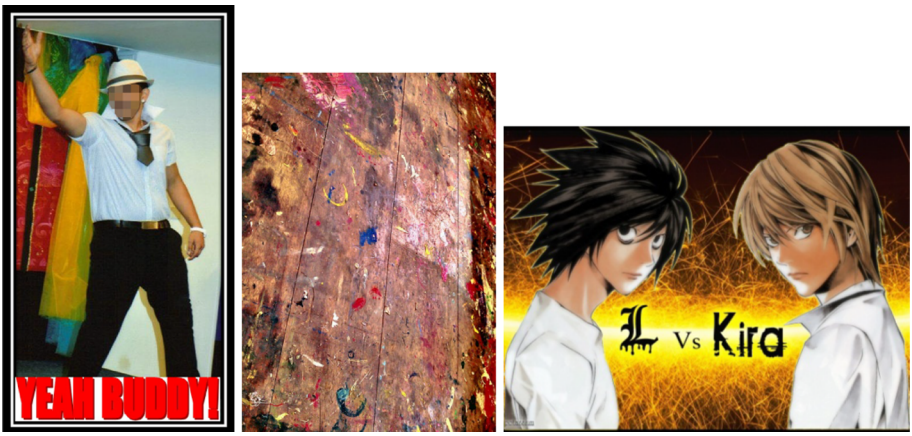

Fig. 2 Images from London workshop (Photos by Ben Bachmair available in Bachmair and Pachler 2011)

linear. Indeed, although the majority of the students we targeted in the workshops were disadvantaged learners, they strongly engaged with the activities, playing with them as a means of (re)discovering their identities. This suggests that the relationship between their biographies and their learning outcomes was fairly complex. In this study, as we analysed the learners' experiences and artefacts, three main themes emerged that may help us answer our questions and develop a deeper understanding of the relationship between learner biographies and learning outcomes and the role that mobile phones play in this relationship.

A first concept that helped us to understand how mobile devices may support identity formation and invention (our Question 1) is that of mobile devices as cultural and learning resources. As noted above, in this study we viewed mobile devices as strategic tools people can use to (re)form their identities, interact socially, and make meaning (Bachmair and Pachler 2013). They appropriate mobile phones according to their personal needs for socializing and meaning making, and this fact may open the doors to multiple learning opportunities, such as supporting identity (trans)formation, enhancing self-representation, and enabling media production. We experienced these affordances several times during the workshops, but they became particularly evident when we looked at the learners' artefacts. For example, the MCVs created by participants in the Italian workshops showed us how they reworked their identities, combining new and old pictures in a new narrative structure. They used the old images stored on their phones and gave them new significance in new media contexts, thus generating new meanings and learnings. Therefore we can say that mobile phones facilitated the process of (re)inventing identity by providing learners with the opportunity to reflect on themselves and to "re-mediate" the personal mobile and visual resources stored in their devices. Indeed, through their mobile phones, participants engaged with the challenge of finding a balance between stability and change, leveraging self-reflection and awareness. As Giddens (1991) observes, "Living every moment reflectively is a matter of heightened awareness of thoughts, feelings and bodily sensations. Awareness creates potential change, and may actually induce change in and through itself" (p. 71). The "ability to be" (Su 2011), which we mentioned above as a condition for lifelong learning, can be traced back to this self-reflective effort to be aware of every moment of everyday life; doing so produces "potential change", whilst the mobile devices offer digital snapshots of life to reflect on.

Moving to the interplay between formal and informal contexts of learning, in response to our Question 2, we found that using mobile devices to bridge different learning contexts was a fruitful way to explore identity and self-representation. When people use mobiles in formal settings, the boundaries between formal and informal become more fluid; this enables them to capitalise on the knowledge and skills they have developed in their daily lives. In this way, the rigidity of institutional structures is no longer at the centre of the learning process; instead, drawing on their actual experience, people generate a more flexible and engaging context for learning. In this study, this was particularly evident in the British case, which focused on the idea that learners are the experts on their own everyday lives. The photo diaries that these young adults created during the workshop to explore and reflect on their personal learning themes reveal how their informal experiences mediate their self-representations, thus bringing elements of their informal learning into the formal education context.

We must point out, however, that this bridging effort is not always successful. When learners are encouraged to use their personal media within formal settings, they can find it interesting, but it can also be upsetting, and evoke various forms of resistance. Indeed, the bridging of formal and informal contexts requires, to some extent, that learners reinterpret their spontaneous forms of appropriation and media use. In other words, the awareness they develop about their cultural resources can lead them to construct or invent a new self-representation. This effort to "rework" media practices in a more explicit and reflective way requires a project design that is particularly sensitive to participants' habitus of learning (Kress and Pachler 2007).

The third theme, related to our Question 3, involves the complex dynamics that characterise the interplay between motivations, attitudes, and expectations, on one hand, and the use of mobile technologies, on the other, and the influence this interplay may have on the participants' learning outcomes (i.e., development of new skills and transformation). As is well known, people's motivation, attitudes, and expectations have an influence on how they perceive their self-efficacy and represent themselves (Bandura 1982). In turn, the use of technologies in learning and social life has the potential to influence individuals' motivation and expectations. More analytically, recent studies on the factors influencing people's attitudes towards technology have found that the individual's amount of computer experience (Garland and Noyes 2005) and the nature of that experience (Teo 2006) are major influences on those attitudes.

Looking at our two cases from this perspective, we noticed some mechanisms that require attention. In the Italian case, individuals who were not highly competent in using media (particularly older adults) came to the workshops with high expectations for their use of new technologies, but their view was largely inspired by a naive technological determinism. On the other hand, individuals who were very familiar with new technologies (typically, but not exclusively young adults) tended to be very enthusiastic about using them and very attracted to exploring the process, but they were relatively less able to assume a critical distance from them. In making this observation we do not mean to restate the old and undemonstrated stereotype that older adults are technologically inadequate or intrinsically reluctant to learn or use technologies. In fact, in their literature review on older and younger adults' attitudes towards computers, Broady, Chan, and Caputi (2010) found that "the negative stereotypes of older people being avoidant of technology and incapable of its use are outdated" (p. 483) and that younger and older adults have quite similar attitudes towards and experiences of using technologies. However, Broady et al. found that, in technology-enhanced education addressed to older learners, the designers should give those learners more time so they can master new skills; they should also take care to

provide them support as they learn to use technology so they feel comfortable and successful. After all, an understanding of technologies as personally significant and useful tools is an important condition to encourage older people to make use of them (Selwyn 2004), not only for instrumental reasons, but also (and above all) as a means to rethink themselves and develop new competences.

These considerations have some consequences for the design of mobile learning. In the case of older people or people unfamiliar with mobiles, who tend to have high expectations of technology but less developed digital skills, designers should address the gap between skills and expectations by promoting processes that allow the participants to gradually appropriate the media; they should also monitor the learners' cognitive loads. In the case of young adults, the designers and facilitators should help the users to assume a critical distance, also explaining to them the benefits of some unfamiliar media practices, and thus lead learners to a more flexible use of digital media. More generally, we see a link between aspirations, expertise, and identity formation/invention that designers must bear in mind when designing learning with mobile devices. Though this link is always important, it is particularly salient with mobile phones since adults, especially older ones, have different levels of expertise and competence.

Conclusions

This study aimed to explore the potential of mobile learning in adult education to support identity formation and development. In the fast-changing and uncertain world of late- or post-modernity, individuals need to continuously cope with new challenges; this condition requires them to develop a flexible identity and a dynamic ability of "being-in-the-world" (Su 2011). In this context, personal mobile devices have been viewed as suitable means of supporting individuals' (adult) learning at any time, anywhere, and across many contexts (Arrigo et al. 2013). However, the use of mobile devices for learning is not self-explanatory.

In this article, we attempted to highlight how mobile devices can facilitate the process of self-exploration, self-representation, and identity formation through our analysis of the learning experiences of two cohorts of (young and mature) adult learners involved in a series of workshops carried out in Italy and Britain. Although the cases we examined were limited, our analysis of learners' experiences and artefacts leads us to emphasise that if we consider mobile devices as learning and cultural resources (Pachler et al. 2010), they may support the ongoing process of identity (re)building, even with at-risk learners and learners from disadvantaged backgrounds. As the Italian case showed, within their digital archive participants intentionally selected and assembled pieces of visual imagery to construct a coherent self-narrative. At the same time, mobile devices can be seen as resources that make it possible to bridge formal and informal education settings, and that facilitate the process of self-representation and learning. As our analysis of the British case showed, learners were able to represent themselves by drawing largely on their expertise of everyday life.

However, we also discovered some problematic issues that cannot be overlooked, such as the mismatch between personal expectations and digital skills among some of the older people, who seemed to have great trust in the power of the media but were somewhat disappointed at their own lack of skills. To better understand the relationship between personal aspirations, self-representation and media skills, more research on adult mobile media practices is required.

Whilst mobile learning is not new, thus far the emphasis has tended to be on technical aspects whilst pedagogical and cultural issues have remained 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 (Laurillard 2007; Traxler 2009) and to concepts of agency, structure, and cultural practices (Pachler et al. 2010), the major emphasis is still on technologies as a driver of change (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, where the research is still limited on mature learners' perceptions and experiences with accessing and using mobile technologies (Wang et al. 2012). 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 now becoming typical in contemporary society. While we have begun to gain insights into the processes by which young people appropriate mobile media (see, for instance, Caron and Caronia 2007), with few exceptions (Licoppe and Zouinar 2009), we still do not know enough about adults' mobile habits and cultural practices.

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