Chapter 14
Language as a Bridge Connecting Formal and Informal Language Learning Through Mobile Devices

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Abstract Informal learning plays an important role in language learning and mobile device ownership fuels its growth, thanks to the availability of educational apps, massive scale services delivered by network operators and emerging designs for situated learning in authentic communication contexts beyond the traditional classroom. This chapter shows how connections between formal and informal language learning may be made through the use of mobile technologies and explores the mutual influence of these spheres, with particular reference to the role of language. Language is the focus of learning but also the means by which learning happens, which gives it a unique mediating and facilitative role. The potential for conversational language to act as a new bridge between formal and informal settings is explored. Motivations for language learning are changing and they will have an influence over what types of learning appeal to new generations of language learners of all ages. Faced with an abundance of resources on the Internet and on their mobile phones, learners will often look for more structured environments and some degree of guidance. The opportunity is there to create learning environments and designs that incorporate the effective use of mobile technologies but that also consider how new social contexts influence the language that is being used and learnt. An example of this is described with reference to the MASELTOV project which is creating innovative context-aware smartphone services for migrants and provides a fertile ground for imagining the future of language learning.

Introduction

Language learning is one of the key disciplines to have benefitted from mobile learning to date. Reasons for this include the nature of language learning content which largely lends itself to being divided up into portions that are suitable for access on mobile devices, the relative ease with which audio-visual media may be

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utilized to create a portable, flexible learning experience, and the fact that 'non-formal and informal education plays a key role for language learning' (European Commission 2012, p. 16). On a global scale, the enormous demand for learning English is increasingly being satisfied by a massive provision of subscription-based mobile learning content and services, sold directly to consumers by telecom network operators, device makers and content suppliers (Adkins 2012). For educators and researchers, interest in mobile language learning stems from the challenge of assisting learners as they apply and extend their language skills in authentic communication contexts beyond the classroom or other environments in which learning takes place. Kenning (2007) highlighted the opportunity for mobile technologies to support situated language learning 'anchored in a real-world setting' (p. 192), and this has subsequently become an expanding area of research and practice.

The unique benefits of mobile learning include the ability to bridge formal and informal learning (UNESCO 2013), which for language learners may be realized through supplementary out-of-classroom practice, translation support when communicating with target language speakers and the capture of difficulties and discoveries which can be instantly shared as well as being brought back into the classroom (*ibid*, p. 21). Mobile learning can deliver, supplement and extend formal language learning; or it can be the primary way for learners to explore a target language informally and direct their own development through immediacy of encounter and challenge within a social setting. What is missing is sufficient explicit connection and interchange between these two modes of learning, one of which is mainly formal and the other informal. Consequently, there are missed opportunities in terms of mutual benefit: formal education remains somewhat detached from rapid socio-technological change, and informal learning is frequently sidelined or ignored when it could be used as a resource and a way to discover more about evolving personal and social motivations for learning.

The aim of this chapter is to show how connections between formal and informal language learning may be made through the use of mobile technologies and to highlight the mutual influence of these spheres, with particular reference to the role of language in this process. Motivations for language learning are changing, which means we need to re-examine how learning should be designed for the next generation including those returning to language study. Future educational scenarios could well involve cycles that interleave or combine formal and informal learning. As lifelong learners increasingly switch careers and move between countries and continents to develop their language competences for different purposes and settings, their learning requirements will not stay constant. They will continue to need some guidance and structure, participation in a learning community and support from others, a sense of progression and achievement and at times formal recognition or credit; however, they will also welcome the chance to use their personal portable technologies in whatever ways can help solve immediate problems and enhance their learning. The classic distinction between formal and informal learning is breaking down, for example, through initiatives to promote the formal recognition of informal prior learning (Smith and Clayton 2009) and as a corollary of mobile device ownership (Cook et al. 2008). This is paralleled by profound changes in

language usage under the influence of the Internet and the mobile phone (Crystal 2001, 2008). In this chapter, the potential for conversational language to act as a new bridge between formal and informal settings is explored. This leads to consideration of new opportunities for developing language skills and cultural awareness together with transferable life and employment skills, as well as the best means of delivering these opportunities to prospective learners.

Purposes of Language Learning

Foreign language pedagogy has long been bound up with available audio-visual media and shifting opinions as to the purposes of language learning, which have defined teaching approaches and methods. Macaro (1997) describes how during the 1970s, 1980s and 1990s an emerging emphasis on communicative competence gave rise to Communicative Language Teaching (CLT) which was adopted internationally yet was characterized by 'an enormous eclecticism' (p. 42). In recent times we are witnessing a convergence of views around the importance of communication across cultural boundaries rather than focussing specifically on language learning and acquisition, especially where the language teaching policy is concerned. The American Council on the Teaching of Foreign Languages has declared that the most important goal is 'the acquisition of the ability to communicate in meaningful and appropriate ways with users of other languages' (ACTFL 2006, p. 3), which will also enable participation in multilingual communities in a variety of contexts and in culturally appropriate ways. This is echoed by Duff (2008) in relation to economic imperatives in the Asia-Pacific region, where what matters is the 'ability to communicate effectively with people across languages, cultures, communities, and new digital media' (p. 1). Responding recently to concerns about the foreign language skills deficit in the United Kingdom and its economic implications, a report commissioned by the British Academy (Tinsley 2013) stresses the need to further diversify existing language provision and provide more applied and inclusive language courses at all levels. Employers declare that they value both language skills and the international and cultural awareness that comes from speaking a foreign language.

Several decades ago, when substantial work on motivation in second language acquisition identified integrative and instrumental motives (Gardner and Lambert 1972; Gardner 1985), instrumentally oriented learning meant attending classes with a determination to gain academic credit or improve one's prospects for employment or promotion. Research has shown that alongside foreign language skills, employers value certain transferable skills in university graduates and that these include self-management and the ability to use their own initiative (Lowden et al. 2011). This is of interest as there is emerging evidence of a good alignment between the deeply personal character of mobile devices and the exercise of learner autonomy, specifically in relation to language learning (Díaz-Vera 2012). The concept of self-access language learning emerged in the early 1980s (Gardner and Miller 1994) and is strongly associated with the development of learner autonomy. Autonomy engages

both the metacognitive and the affective domain, and for language learners this has special significance since acquiring a second or foreign language ultimately changes the learner's identity (Fortunati 2002; Elliott 2010). This is where integrative motivation comes into the picture: the desire to gain access to another culture and the people who are already part of it. Identity change should begin with recognition on the part of educators that the learning is personal: language learners bring to the classroom 'a personal history and personal needs that may have little in common with the assumed background and implied needs on which the curriculum is based' (Little 2004: 70). This then suggests that a language learning programme or curriculum should be adaptable, with the possibility of allowing learners to determine at least some of the content and activity types themselves, but the means to achieve it have remained under-explored. One way forward is through CLIL (Content and Language Integrated Learning) which combines subject and language learning. For example, Smith et al. (2013) refer to the work of Banegas who reported an initiative where lessons and materials were negotiated between teachers and secondary school students; the students voted for topics and suggested sources. In this instance, set course books were valuable for grammar learning but skills development was negotiable.

Taking the learner-centric approach a step further, we must also consider why particular groups of learners have a need for certain aspects of foreign language learning and rehearsal, notably listening and speaking. They include:

- Migrants. These learners frequently have to practise listening and speaking skills in order to seek work or improve their social integration in another country. Palalas's (2012) research focused on the use of mobile technology to expand learning beyond the classroom and proposed some guidelines for a mobile system to support the development of listening skills in those who are learning English in relation to specific jobs, enabling them to practise at any time of the day or night.
- Students spending time abroad. In addition to improving their language competency, these learners may be collecting information that they can use to further their studies. For this group, Shao et al. (2007) designed an informal mobile group blog, enabling the students to share observations about local language and customs and thus get more personal value out of their study abroad experience.
- Professionals in global companies and organisations who may be required not only to communicate in a foreign language but also to participate in multilingual meetings (Mondada 2012).
- Heritage language learners. *Foghlaim Ón Nuatheicneolaíocht* (learning through new technology) was a mobile learning intervention aimed at enhancing the teaching and assessment of spoken Irish language in secondary schools throughout Ireland (Arrigo et al. 2010).
- Distance learners who want to build their confidence. This was the case with the distance education students participating in a study conducted by Demouy and Kukulska-Hulme (2010), for whom a specially designed mobile phone facility was a welcome additional opportunity to practise aural and oral skills, often at home.

- Learners with specific learning challenges that require a more personalized approach and targeted speaking or listening practice. It has been recognized for some time now that a foreign language course can trigger learning difficulties that students thought were behind them, or it can reveal previously undiagnosed learning problems (Schwarz 1997). Mobile learning research currently addresses how learners with disabilities or special needs can be assisted through the use of appropriate software on a mobile device (e.g. Fernández-López et al. 2013) although this is not yet specific to language learning.

Common requirements for these groups include personalized use of technology and being able to integrate life and work experiences with learning. This can be achieved through informal learning, although taking part in some formal classes is usually still essential. The next section considers the role of language and its evolution in connecting these spheres.

Language as a Bridge

The idea of bridging formal and informal learning evokes a metaphor that suggests two entities remaining separate, but with an easy means of crossing over from one to the other. This metaphor is subsumed within the concept of learner-centric seamless learning (Wong 2012) and connects with other aspects of seamlessness including the ability to move easily from a personal to a social space and being free from constraints of location and time. At times formal learning takes place in informal settings, and informal learning in formal settings (Wong and Looi 2011); therefore, the setting itself does not completely determine the level of formality. This can also be said of language use: the setting is a strong determinant, but formal language is at times used in informal settings and informal language in formal ones.

In parallel with considering how mobile technologies may act as a bridge between formal and informal language learning, it is necessary to reflect on how language itself acts as a tool and is implicated in the externalization and representation of formality. The process of education with its norms and conventions is one way in which language use in society is established and perpetuated, but it is also the ground on which issues of language use are questioned and examined, including the functions of language in society and in education (e.g. Wells 1999). Mobile learning is not only a means of learning a language; it is also a lens with which to view language usage and an instrument that can change its use.

The traditional approach to overcoming linguistic and cultural distance is by means of translation. As a highly skilled activity, translation requires human expertise which is being partly replaced by automation. Ambiguity, non-equivalence and cultural references continue to pose a challenge to automation, while Internet and mobile device users' creative and informal use of language is a new development that once again puts high-quality fully automatic translation out of reach, just as it was becoming feasible. Nonetheless, translation tools are now widely available and

mobile apps that translate words and phrases can be used in the midst of conversation as a means of support (where this is deemed socially acceptable). When the translation is 'spoken' by the mobile device, the requirement for the interlocutor to be literate is removed, although the voice which is generated is not matched to that of the human speaker and it has a rather formal tone. Thus speech production on a mobile device gives a rather formal flavour to what might otherwise be an informal exchange. If informality is to be conveyed at the same time, this must be done through other means such as gesture and facial expression. Interpreting skills, which are used in oral communication and are very different from the skills of written translation, include advocacy, cultural brokerage and provision of emotional support (Butow et al. 2012).

The traditional distinction between written (mainly formal) and spoken (mainly informal) language gives rise to 'conversation' as an informal speech genre with certain distinguishing norms and features (based on Crystal 1987; Zhang 2012):

- Everyday conversations generally do not have careful thematic planning.
- The language is characterized by a degree of non-fluency, rapidity and loosely connected constructions, with some elements being implicit (since context helps to clarify meaning).
- Vocabulary is limited, and there is use of non-standard and deviant forms, as well as placeholder words standing in for words that cannot be retrieved quickly from memory.
- Conversational turn-taking affects the manner and pace of delivery, e.g. speeding up at the end of a sentence.

Although such characteristics are challenging for language learners, at the same time the interpersonal malleability of conversation – its inherent flexibility, its tolerance of ambiguity and error and the opportunity to use voice modulation and gesture and to negotiate meaning – could be more conducive to foreign language production than the stricter requirements surrounding formal and written discourse. In practice however, conversational language is often taught as a series of exemplar dialogues with set phrases and predictable outcomes: informal discourse is thus presented in a formalized or even a formulaic way. The potential to engage in authentic reciprocity or to develop the capacity to respond to an unexpected situation is necessarily underutilized in traditional language classes which must cater to the needs of whole groups or cohorts – and the requirements of examinations and tests – rather than individuals' needs or desires in terms of communication and self-expression. Limited linguistic input from a single teacher further constrains what can be achieved in such classes. External resources, including the Internet, expand the repertoire but not necessarily the ability to adapt content and interaction to an individual learner or situation. Mobile technologies do not imply or guarantee individualization; however, there is scope to implement this in various ways (see, e.g. Petersen et al. 2009). Petersen et al. (2012) suggest that through the use of an appropriately designed mobile app that combines ideas from crowdsourcing and social networks, learners can create language learning content that can be shared by others in their group and that this can enable them to use language more creatively

in their conversations. It remains to be seen whether there will be strong evidence that such creativity will indeed be more likely when using this app, but the possibility is intriguing.

Digital and mobile media are changing language use at the same time as they are a means to extend the use and learning reach for any given language. Ever since the advent of electronic communication, expectations and practices that once made clear distinctions between spoken and written language are no longer the same (Crystal 2001). Practices have continued to evolve with the recent explosion of instant communications, social media and increasingly common use of visuals not only as illustrations but as substitutes for words. Furthermore, a strongly interconnected, social, user-centred web makes it more common to encounter foreign languages than was the case with the previous generation. For example, there is more opportunity to become curious about the meanings of foreign words and sentences encountered casually in environments such as globally accessible microblog posts, discussion groups and forums. This may help break down language barriers over time; however, such a suggestion is not unproblematic because encountered usage may be non-standard. Kenning (2007) describes the Internet as a 'prime site of struggle between conformity and unconventionality' (p. 67) when it comes to language evolution and points out that exposure to many language variants can be unsettling and confusing for language learners. We can hypothesize that mobile Internet access might even add to the difficulty, since mobile devices are not designed for simultaneous access to multiple resources such as definitions, examples, comparisons and translations, as well as to people who can help. Nevertheless, the question arises as to whether such unplanned foreign language encounters can constitute a novel type of motivation for learning diverse languages, for exploring variety within languages or even for a re-conceptualization of how language learning should take place. Exposure to informal and conversational foreign language usage (which can be observed and studied at leisure) may yet become a new bridge to language learning, but perhaps not without conscious consideration of how this could happen.

Emergent Forms of Language Learning

It seems reasonable to suggest that all new opportunities, models and tools for developing language skills and cultural awareness should be considered for the modern world, with additional evaluation of how they support transferable life and employment skills such as teamwork and collaboration, learner self-management and autonomy. Mobile learning is certainly a strong contender. McFarlane, Roche and Triggs (2007) identified three pedagogical models for mobile learning, from fully teacher-directed to fully autonomous learning, with 'teacher-set' activity in between, and an analogous set of models was proposed by Kukulska-Hulme (2010) but with greater emphasis on the rich and varied resources and social networks now available to learners and how these may shape their learning. Language learners have unprecedented access to authentic language content, native speakers and all

manner of language learning materials that were previously out of reach. Popular, freely available resources for language learning include websites, podcasts, mobile apps and open content repositories. When combined with social networks, these represent an enormous resource for the development of language skills, although due to difficulties in identifying and accessing appropriate material and support, many learners will experience considerable frustration (Kukulska-Hulme and de los Arcos 2011).

Faced with such unorganized abundance, learners will often look for more structured environments and some degree of guidance. Ordinarily this is offered via courses of study, whether teacher-led or self-administered. In recent years, a number of online learning communities have become available where language learners can join others in a semiformal environment that provides some structure but also gives them a degree of freedom and choice. One such online language learning environment is 'busuu' (www.busuu.com), which provides a gamified learning experience in a large worldwide community of learners. Apart from working through learning materials and exercises, users also give feedback to other learners. They can set themselves long-term and short-term goals and they receive various rewards that are helpful in maintaining their motivation. They can do all this at a fixed computer or on their mobile device. The emergence of informal yet structured environments such as busuu raises the question of how such environments fit into a broader ecology of language learning opportunities and resources available through mobile learning. The next section describes a study in mobile innovation to support social inclusion and context-specific language development of one particular target group who are already users of services such as busuu – migrants in European cities.

Informal Language Learning in the City: Crossing Boundaries

Large cities attract migrant populations for whom rapid and tailored language learning is a vital aspect of social and economic integration. The MASELTOV project (www.maseltov.eu) is in the process of developing a suite of context-aware smartphone services to assist migrant populations in a number of cities across Europe with daily tasks such as navigation around the city and communicating in the local language. Target learners are immigrants with a relatively low educational level and a cultural background distinct from the host country. In this social inclusion project, the author and her colleagues are working towards defining an 'incidental learning framework' (Kukulska-Hulme et al. 2012; Gaved et al. 2013) to represent a new ecology of activities, resources and human networks in a future-oriented smart city setting where language learning is interwoven with other daily tasks and travel around the city. Incidental learning is traditionally understood as learning that is unintentional or unplanned and that results from other activities (Kerka 2000). In second language acquisition research, incidental learning has been

explored mainly in vocabulary-learning studies showing that the activity of casual reading can increase vocabulary size, particularly if certain techniques are applied including dictionary lookup; there is a focus on the relationship between form and meaning and revision after reading (Hulstijn 2003, 2012). This suggests that certain planned strategies can increase incidental learning; it is almost a case of developing good habits to encourage incidental learning. The use of mobile technologies reinforces this, in that unintentional or unplanned learning is, paradoxically, more or less expected when learners are out in the world where anything can happen; therefore, new linguistic and cultural encounters should be factored into the learning experience.

The work on MASELTOV is informed by previous learning models and frameworks including Kearney et al. (2012), Kukulska-Hulme (2012), Park (2011), Luckin (2010) and Sharples et al. (2007), which consider the learning process in relation to various actors, resources and tools available in technology-enabled environments where learners are increasingly responsible for their own learning. The framework we are developing currently envisages a cyclical process whereby learning takes place in the course of daily activity typically beginning with preparation at home, followed by learning while travelling and walking in the city, and a subsequent period of reflection and consolidation when more structured or playful learning can take place on the way home and at home, with family members or friends playing a part. Regular journeys between the home and the city centre create multiple learning opportunities: Language can be rehearsed in preparation for an event, new vocabulary and phrases can be noticed and recorded, and there is a chance to make contact with volunteers, mentors or fellow immigrants who are willing to help. The framework draws attention to the fact that from a learning perspective, we need to design services that are task-focused, that give access to social support and that help learners achieve outcomes that they value; we are also doing additional work on feedback and progress indicators which will help sustain the learning over longer periods of time. Therefore we take into consideration the place and time when learning incidents occur, the tasks that learners are carrying out and their intended outcomes, tools that can be used and any social support available. Situations that require an immediate response can be interspersed with more leisurely planning, structured learning and reflection, each of which may be triggered by the mobile services offered by MASELTOV. More detailed accounts of the incidental learning framework and the project's progress may be found in Gaved et al. (2012) and Kukulska-Hulme et al. (2012) and in the deliverables on the project website.

One of our ambitions is to design target language support and learning services that take account of typical tasks and situations while also being responsive to unexpected incidents that may challenge the learner. Examples of unexpected incidents are having to interpret a notice stating that due to train service disruption, passengers are requested to board a specific bus instead, or arriving at a library and finding a notice stating that due to flood damage, the library is temporarily closed but an information service is available elsewhere. The support tools and services will integrate new tools such as TextLens which uses a phone's camera to recognize a text

such as a sign or a notice (Neumann and Matas 2012) and enables quick translation in situ. However, such tools have limitations and there are occasions when human support is needed. Project partners include three non-governmental organisations (NGOs) that provide services to migrants in Austria, Spain and the United Kingdom; these organisations are our gateways to networks of staff and volunteers who can arrange social support for migrants. In the above scenarios, the migrant might take a photograph of a notice and post it to a social forum to get an explanation, or there could be a facility to call a volunteer who speaks one's native language and they might explain that it is quite common for a bus service to be provided when a train is not available.

Through a series of workshops, interviews and focus groups, the needs of several target migrant groups have been identified, from practical tasks such as finding a home and a job, to breaking out of the closed circle of one's own community. The project has also identified the risk of oversimplification of foreseeable situations for which assistance can be provided, since the lives and situations which migrants face are complex. As noted by Ros (2012), any tools provided need to be adaptable, so that they may be appropriated and enriched by the users themselves.

The project's overall aim is to facilitate social inclusion by using ubiquitous technologies to support migrants as they undergo fundamental changes in their socio-economic contexts, when they have to re-establish themselves in a new society, understand a new language, a new culture and a new way of living. Support for the development of target language skills is an essential component of social integration. However, Tammelin-Laine et al. (2013) draw attention to the fact that for those who do not have adequate literacy skills in their first language, acquiring another language in a new country presents a special challenge. In such cases, less formal learning arrangements may be required. An account of successful projects funded through the European Commission's Lifelong Learning Programme highlights the Language Café (established in libraries, cafés and restaurants) as having benefitted people without easy access to language learning or who lacked the confidence to join a formal class, including immigrants (European Commission 2010).

As well as crossing physical boundaries within cities that may tacitly exclude people from certain areas because they do not feel able to go there, migrants are faced with cultural differences that present additional boundaries. The MASELTOV project is exploring game-based approaches to supporting shifts in cultural awareness and is setting up social networks to facilitate peer problem-solving and further exploration of cultural issues. It is hoped that by getting people involved with truly engaging and helpful informal language learning on their mobile phones, some of them will also decide to take up formal language lessons, to improve their grammar and accuracy and to develop more advanced skills in communication and interpretation.

Conclusion

Informal, incidental learning can be seen as a transitional route into formal study and a complementary as well as an alternative mode of learning. Mobile learning is not only a helpful means of learning a foreign language, but as has been argued in this chapter, it is also a lens with which to view language usage and an instrument that can change its use. Digital and mobile media are changing and extending language use to new environments as well as creating opportunities to learn languages in different ways. With increasing application of personal mobile technologies in informal language learning, migrants, students, employees and other learners may begin to explore more readily how they may become agents of change in the landscape of emerging language learning services and resources.

Convention holds that having a conversation in a foreign language is more difficult than reading and writing, and indeed this should not be understated, but new means of supporting conversations may overturn this in time. More exposure to fragments of conversational foreign language usage, together with the possibility of gaining immediate support, may well become a new bridge to language learning, although there is more work to be done in shaping how this will happen. Mobile technologies enable us to get physically closer to social contexts of language use, which will ultimately influence the ways that language is used and learnt.

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