Journal of Universal Computer Science, vol. 21, no. 10 (2015), 1234-1247
submitted: 28/5/15, accepted: 12/9/15, appeared: 1/10/15 © J.UCS

Mobile Technology for Foreign Language Teaching: Building Bridges between Non-formal and Formal Scenarios

J.UCS Special Issue

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Abstract: In this introductory article, the context, history and definitions around Mobile Assisted Language Learning (henceforth, MALL) are discussed. Firstly, some definitions, some classifications and some challenges are presented to help the readers appreciate what they are about to find. Then, the contents of this issue are described and commented, and a brief final remark is provided on its underlying purpose within MALL literature.

Key words: Second Language Learning; Mobile Learning; MALL (Mobile Assisted Language Learning).
Categories: J.5

1 Introduction

This special edition is about mobile learning, specifically mobile learning and languages. Any general introduction to mobile learning must clearly start by establishing what is meant by the term 'mobile learning' and perhaps making some distinctions between 'mobile learning' and various other activities involving either movement, learning or, implicitly, personal mobile digital technology with which it might easily be confused. Although superficially easy, this has proven to be problematic and challenging from the very earliest days, as different factions argue for the mobility of the technology, the mobility of the learner and the mobility of societies as being the defining feature.

The need to define mobile learning may, of course, seem sterile and pointless but there have been several reviews of the evolution of the prevailing definitions and, in general, they illustrate a trend away from definitions that place technology, devices and hardware at the centre to ones that place the learning and the learner at the centre, and increasingly move beyond this to embrace more varieties of movement, of the

learner and of the learning, through space and though context. This shift is significant and shows a shift in understanding, not just a statement of fashion. The definitions do, however, often see mobile learning as a subset of learning, implicitly e-learning, without questioning whether the learning itself is changed or redefined. Mobile learning might, in fact, not be the mobile aspect of learning so much as the educational aspect of mobility, and we must recognise that any definition of mobile learning should embrace the increasing proportion of activities involving knowledge and mobiles that takes place outside the mobile learning research community and outside the confines of what is formally acknowledged as learning.

As we implied, above, 'mobile learning' is not merely the conjunction of 'mobile' and 'learning'. It has always been automatically taken to mean 'mobile e-learning' and its history and development have to be understood as both a continuation of 'conventional' e-learning and its aspirations, but also a reaction to this 'conventional' e-learning and to its perceived inadequacies and limitations. Over the last fifteen or so years, this 'conventional' e-learning has been exemplified, for example, technologically by the rise of virtual learning environments (VLEs) and the demise of CAL (computer assisted learning) 'packages' and pedagogically by the rise of social constructivist models of learning over the behaviourist ones, by the growth of the learning object approach, by expectations of ever increasing multi-media interactivity and of ever-increasing power, speed, functionality and bandwidth in networked PC platforms. These are, thus, some of the defining points of departure for mobile learning, though perhaps seeing mobile learning in these terms, that is by referring back to 'conventional' e-learning, is the mark of early 'mobile learning visitors' and not the mark of the growing number of 'mobile learning residents' [cf. White & Le Cornu, 11].

This portrayal is of, course, only really accurate for work in Europe, North America and East Asia. In parts of southern Africa, for example, the term 'mobile learning' is recognised but is grafted onto a tradition of open and distance learning (ODL) and on to different pedagogic traditions, ones that have occasionally been called 'instructivist' and have concentrated on didactic approaches, not on discursive ones. Mobile learning in these parts of the world is a reaction to different challenges and different limitations, usually those of infrastructure, poverty, distance or scarcity.

In either case, we have to recognise that attempts at identifying and defining mobile learning grow out of difference, out of attempts by emergent communities to separate themselves from some older and more established communities and to move on from perceived inadequate practices and theorising. Interestingly, at the first *mLearn* conference in the spring of 2002, actually a workshop for a handful of delegates, organised by Professor Mike Sharples in Birmingham, UK, one of the keynote speakers predicted that mobile learning would have a separate identity for perhaps five years before blending into general e-learning. This has yet to happen and mobile learning continues to gain identity and definition rather than lose them, although perhaps mobile learning is the pre-occupation of a professional research community being outflanked and overtaken by the enormous capacity of universal mobile technologies to empower people, not self-consciously learners or teachers, not consciously enacting mobile learning, to generate their own learning as they create, discuss, transform, share, store and consume idea, images, information and opinions.

Nevertheless, 'mobile learning' is continuing to evolve and, except insofar as

some body, like the International Association for Mobile Learning, might have provided an 'official' definition, the meaning stays relatively vague and consensual, rather than precise and prescriptive. The first emergence of 'mobile learning' as a distinct research community could be traced to this workshop held in Birmingham, the precursor of the mLearn conference series, though obviously the presentations and papers were the consequence of proposals and projects initiated several years earlier. These and subsequent projects are perhaps the better definition of 'mobile learning' and this mobile learning community in its first fifteen years demonstrated across a variety of countries, sectors, subjects and settings that it can enthuse learners, especially the marginal, the disenfranchised and the disengaged. It also demonstrated that it could also extend learning beyond its current reach and enrich and enhance learning beyond its existing conceptualisations and practices [e.g., Traxler, 08]. Mobile learning also challenged earlier theories of technology enhanced learning derived from the era when first the computer then the networked computer were the dominant educational digital technology.

In more detail, this means that the mobile learning research community has demonstrated that it can enhance, extend and enrich the concept and activity of learning itself, beyond earlier conceptions of learning [Herrington *et al.* 09; Barcena *et al.* in press]. This includes ideas of:

- Contingent learning and teaching, where learners and/or teachers can react and respond in real time to their environment and their changing experiences. Agile learning is another term for this.
- Enquiry-based learning, self-directed learning where learners' own choices and curiosity as they explore scenarios created by teachers.
- Collaborative learning, where learners work on a shared task, and the learning outcomes build on their collective rather than individual efforts.
- Situated learning, where learning takes place in surroundings that make learning relevant and meaningful.
- Authentic learning, where meaningful learning tasks are related to immediate learning goals, for example basic literacy or numeracy in work-based learning on the job or learning on placement for junior doctors in surgeries, student vets in consultations, nursing trainees in the wards and trainee teachers in schools.
- Context-aware learning, where learning is informed by the history, surroundings and environment of the learner, until recently, episodic, individual and isolated but the increased functionality of mainstream retail mobiles opens up enormous possibilities for developing more intelligence and using more history behind the learner experience.
- Augmented reality mobile learning, where learning builds on the local physical context supplemented by an audio and/or video overlay.
- Personalised learning, where learning is customised for the preferences and abilities of individual learners or groups of learners.
- Learning support, providing a guide to help students with day-to-day tasks. Typical systems can be accessed by mobile phones with web browsers and GPS, systems giving university students location-specific guidance to academic resources and urban venues.
- Pastoral support, enabling students to access organisational and non-

academic services and support. Increasingly this can be context and location-aware, allowing personalised and timely support.
- Game-based learning, now increasingly mobile.
- Assessment techniques that are aligned to these new affordances of mobile devices, for example geo-tagged image capture.

All of these represent or facilitate a trend that takes learning away from the classroom and the lecture theatre, in fact, away from the institution and the curriculum, and at a practical level, these all support courses and programmes that engage with the world outside the institution, either exploring that world or training students to take their places in it. They do, however, represent a specific set of pedagogic assumptions about relations between the institution, experience, learning and education that are not necessarily universal [Traxler & Crompton, in press].

The mobile learning community has also demonstrated that it can take learning to individuals, communities, and countries that were previously too remote or sparse, economically, socially or geographically, for other external educational initiatives to reach. This second category has included addressing the following:

- Geographical, geometric or spatial distance, for example, reaching into deeply rural areas. This is becoming educationally richer as networks drive out greater bandwidth and coverage but is still held back by shortage of modern handsets and support.
- Sparsity, connecting thinly spread and perhaps nomadic learners to create viable communities of learners, sometimes held back lack of experience in supporting communities of distance learners and sometimes by the ways that the most widespread network tariffs restrict access to services.
- Infrastructural or technical barriers, for example, areas of in South or Central Asia or sub-Saharan Africa, supporting those communities lacking mains electricity, secure clean buildings or landline connectivity.
- Social exclusion, for example, reaching students unfamiliar with and lacking confidence in formal learning, such as the homeless, gypsies, marginal groups, nomads, those not-in-education-employment-or-training (NEETs) and township youth.
- Physiological or cognitive differences, for example, supporting learning access and opportunities for people with impaired hearing or mobility, or scheduling and organisational support for people with dyslexia.
- Privacy and connection, for example, helping chaperoned or secluded women and girls in some cultures to access informal and social learning. Cultural sensitivities may, however, inhibit the reporting of this aspect.
- Dead-time, small bursts of otherwise unused time, such as waiting in elevators, cafes, buses, queues, sometimes used as an example of bite-sized learning; although possibly educationally limited, mobile phones will always be carried by learners whereas books or laptops might not be.
- Corporate training, delivering training to dispersed and peripatetic workforces.

All of these, to a greater or lesser extent, challenge the current hegemony of ideas of learning based on content and discussion, and move towards learning based on context and connection.

The mobile learning community, in an increasingly widening and amorphous

sense, has also demonstrated that the creation of learning, as well as its consumption, can involve learners and everyone else in:

- Podcasts, for example, iTunes downloads.
- Social networks, obviously Facebook and Twitter.
- Blogs.
- User-generated content, for example YouTube, Flickr, Wikipedia.

Although these are not inherently mobile (and may, for example, render poorly on small screens on mobiles or fail to exploit location awareness), they are increasingly and predominantly accessed on mobiles. They do, however, represent a growing resource for formal learning and a growing indication of the community of mobile informal learners, conceptualised as the version of self-directed lifelong learning called *heutagogy* [Blaschke, 12]. (In some senses, there is a growing divergence between formal institutions espousing 'open' educational resources for established practices of learning and informal groups and individuals adopting 'free' resources, such as YouTube, Flickr, iTunes, Facebook, and Twitter for emergent social and community learning.)

In order to get a richer understanding of mobile learning, it is possible to develop more sophisticated classifications than the ones outlined above, for example, highlighting context as a significant axis and breaking it down into: free, formalised, digital, physical, and informal, with tools, control, communication, subject and objective as the other axes [Frohberg *et al.* 09]. Another classification uses transactional distance theory as one axis, loosely defined as the psychological gap between instructor and learner, from high to low, with socialised/individualised activity as the other axis [Park, 11], giving four quadrants. These alternative classifications then allow individual projects to be mapped and show how mobile learning is understood in practice. This might be valuable in exposing the difference between mobile learning is enacted as opposed to merely espoused. These classification exercises can sometimes, however, be implicitly circular exercises in which the connotation and the denotation of mobile learning feed off each other.

Many authors cite and quote an early attempt to pin down some defining characteristics of mobile learning, quoting [Traxler, 05]: "[…] there are core characteristics that define mobile learning and these characterize mobile learning as:

- Spontaneous
- Private
- Portable
- Situated
- Informal
- Bite-sized
- Light-weight
- Context aware

And perhaps soon:

- Connected
- Personalised
- Interactive"

These may now seem prescient, obsolete, self-evident, trite or eternal, but they have resonated with the mobile learning community down the years.

This has been a fairly generic introductory overview and has deliberately not mentioned language. The history and evolution of mobile learning has been haphazard and incoherent and if one looks back, language and language learning may

or may not appear in any given category, sector, country or modality. One purpose of this overview and of the various classifications is to challenge language specialists to think about the gaps and opportunities that these classifications expose. Another purpose is to form a context for the following papers. This may be a tactical and backward-looking response because this overview ignores the on-going impact of these mobile digital technologies on the nature and uses of language in wider social context. This impact could be analysed in terms of the impact on linguistic genres and social practices; the impact on plurilingual communities and the impact of the global hegemony of one culture, language and country. This would be a more radical and forward-looking response [Traxler, 13] and the following articles should also be viewed in that context too.

2 The contents of this volume

MALL is receiving increasing attention on the part of students, policy makers and practitioners, in the contexts of university education, lifelong learning and online training in general. Accordingly, there is a growing number of second language courses, projects and initiatives that incorporate mobile-based strategies [Castrillo *et al.* 14]. The present volume, *Mobile Technology for Foreign Language Teaching: Building Bridges between Non-formal and Formal Scenarios*, seeks to offer an illustrative account of the field from different theoretical, methodological, and technological perspectives. This special issue consists of eight articles that start by covering the most versatile perspectives of MALL (e.g., pedagogical, linguistic) and move towards strategies and applications that incorporate distinctive elements such as collaborative work, social media, language laboratories, podcasting, audiodescription or gamification.

The first article, "Reflections from SIMOLA – Situated Mobile Language Learning" by Annamaria Cacchione, Emma Procter-Legg, Sobah Abbas Petersen and Marcus Winter, starts by presenting the frequently ignored relevance of neuroscience in relation to technological learning design and MALL. There are, of course, the often mentioned affordances of MALL related to its perverseness and its mobility, but there is another one related to the neurophysiology of learning and, in particular, to the relationship between cognition, memory and learning itself. As explained in the article, learning involves the formation and strengthening of neural connections and networks. The argument is that good neural networks are built by experiences characterized by novelty, intensity, and movement. Therefore, if enriched environments that are novel, intense and mobile lead to more effective learning, it is only common sense that the teacher must look for methodologies/technologies that potentiate them. MALL has specific features that can predict its success as a learning environment and tool, particularly its *mobility*. Mobility is not only a physical action strictly speaking: there is a psychological correlate as our mental faculties (attitude, motivation, focus, etc.) are activated in an adaptive manner and they are affected by new stimuli while on the go. Furthermore, MALL allows for contextual, situated learning, as this occurs linked to real world situations. The relation between learning, settings, and students' experiences is deeply rooted in Constructivism. As the authors explain, when MALL incorporates context into learning, it activates both brain hemispheres, as much academic content is processed in the left hemisphere and

context in the right one. Since both hemispheres deal with emotions and this, in turn, has a major role in learning, it is strategic to stimulate positive emotions to a certain extent for learning purposes. Positive emotions can be enhanced by bringing forward the student's interests and also through gamification. Both can be easily incorporated in technology-based learning and MALL. Another necessary mental function for effective learning is long-term memory. It has been argued that this can be obtained by organization, rehearsal and elaboration. Again, MALL can promote these activities in learning designs that involve the gradual incorporation and expansion of new content coming from direct observation and meaningful personalized processing. The incorporation of MALL in multiple-environment learning is even coherent with the redundancy in brain functionality.

The article moves on to present the evolution of an app designed to support the knowledge and understanding of language and culture in-situ, through the creation and negotiation of a crowd-sourced repository of related items found in everyday life. The system also allows students to annotate and tag interesting elements. Although it started in a wiki-based fashion, it became more horizontal to enable multiple and diverse content in the same entry. Once new content is collected/commented using the mobile app, the online repository common to all the system users is updated. The online repository provides a web interface for language learners as a central point around which a community of practice can form. The system was formatively evaluated. This process led to a range of design recommendations on how the system could be improved and further developed to better meet the needs, expectations and preferences of students and teachers, among them, the ability to localise the user interface for different cultures, create user groups and profiles for separate target languages and regional contexts, and allow user identities. Finally, the lessons learnt from the project are discussed in relation to widely acknowledged critical success factors of running a successful mobile learning project.

The second article, "The Mobile Language Learner – Implications of Being Productive" by Linda Bradley, presents research on productive web-based second language learning activities that can be effectively undertaken using mobile devices and how the students' own learning strategies – mainly, their engagement - contribute to the process. Bradley analyses the widely agreed upon affordances of MALL, emphasizing the expansion and augmentation of the learning experience and the facilitation of student engagement and collaboration. She explains how in the early days of the use of mobile devices for learning purposes, they were considered to be instruments that could primarily add autonomy to the process. However, progress in MALL and the sociocultural direction that general pedagogy gradually took promoted the view of mobile devices as instruments that could facilitate diverse forms of sharing, collaboration and cooperation between students.

The population of Bradley's research was ideal for the task: a homogeneous group of computer-literate and plurilingual students, with an average level of general English and proficient mobile users. The research focused on the development of the students' ESP production competence (academic writing and presentations) and explored 'the learner's perspective' on ML in terms of personal choice of tools and learning spaces. Questionnaires and interviews were used. The former allowed for some quantitative evidence and the identification of usage trends. Voluntary individual interviews were undertaken in a semi-structured way around the same

topics as the questionnaire, in the hope that reflection during the time passed since the questionnaires were undertaken would have led to the formation of deeper and more grounded considerations.

The research revealed a trend for the students to own and take along more than one mobile device and to use it on a daily basis for searching for information on Internet. The usage they made of desktop computer equipment was transferable to that of mobile devices with very specific restrictions related to the task in hand, such as the software installed for programming and networked gaming or the size of the screen. However, when such restrictions did not apply, mobile devices were the preferred information and communication tools, particularly when on the move. In the academic context, the research revealed that students' search for online materials to complement both the taught classes and the textbook was undertaken on their own initiative, aside from the teacher. Hence, students distinguished between randomized and more organized learning, and expressed a concern that extra curricular mobile language learning would lack a targeted purpose and hence, be erratic. Engagement required self-discipline, which was sometimes linked to places and times of day.

Regarding the type of mobile-based activities undertaken, the research showed that there is a growing tendency for the active sharing of content in dedicated communities and the students' participation in the emerging discussions, even starting them. Such pro-active efforts are arguably more effective than just passive following. Being productive in some way was found to be engaging by students, and opened the possibility of habit creation and medium-term usage, which is envisaged to be linked to effective progress. Finally, perhaps the most extraordinary finding in this research was that students included, among the mobile-based learning activities, newsletter reading, SIG participation, and the like. This reveals a highly flexible, almost ubiquitous use of mobile technology that is leading to an equally flexible and rich conceptualization of the learning experience and a convergence between the virtual and physical worlds. Among what students considered to be useful sources for learning, videoclips (e.g., documentaries, tutorials) were emphasized, which again shows a strong connection with the visual and dynamic digital existence in which they are immersed and points at the increasing blurring between digital learning and digital living.

The third article, "Determination of Students' Attitudes for Mobile Integrated EFL Classrooms in Higher Education Institutions and Scale Development" by Hüseyin Uzunboylu, Çiğdem Hürsen, Güliz Özütürk and Mukaddes Demirok presents a study of second language university students' attitude towards the use of mobile technology. The author starts by reflecting on the worldwide spread of mobile devices and the versatile and constant use that people make of them. From here, he understandably infers that it would be reasonable to assume a revolution in the second language mobile-assisted classrooms parallel to the revolution that has taken place in other areas of human activity related to communication and information retrieval. In order to study these two issues, a mixed methodological approach was used. In this study, the author developed a reliable and valid scale to determine students' attitudes towards a mobile enabled second language university course. Universities do not typically have technology-included curricula, so the author claims this work points toward a new trend in university second language courses. According to him, language teachers are under pressure to have a positive attitude toward mobile

technology and its incorporation in their classes. The relevant literature shows that no scale has yet been developed which is sufficient to identify students' attitudes towards second language learning using mobile technologies. It is to be noted that this research was limited to university students could be argued to be expandable to other educational contexts in the future.

The fourth article, "The Role of Social Learning Networks in Mobile Assisted Language Learning: Edmodo as a Case Study" by Huseyin Bicen, focuses on social networks as an increasingly growing phenomenon in terms of their development and number of users. The most popular of these, Facebook, is so for its ease of use and the ease of adaptation of the tools it offers. Edmodo has a profile and communication structure similar to Facebook. As the author says, the most noticeable difference is that the latter is heavily learning-focused (i.e., there is also an extensive area for assigning grades, administering questionnaires and quizzes, making announcements, assigning homework, developing libraries, etc.). Because of these features, the author claims that Edmodo can be a useful network for language learning context. Given the consolidated relation between mobile technology and language learning, the article presents a piece of research on the use of Edmodo by a group of university students who sought to improve their language skills prior to receiving face-to-face taught classes. Specifically, the research examined the effectiveness of pre-service teachers on mobile-supported Edmodo. For about half a term, course materials were provided to the students in Edmodo and other tools from this network were also used for homework, announcements, and evaluation, instructor contact and peer interaction. Apart from studying the materials provided by the pre-service teacher, students contributed with their own comments, links and files. The Edmodo sessions took place in a highly organized way (e.g., with assigned roles and warnings and reminders about late submissions) and students were required to participate socially and assist their peers with their language difficulties. The study participants exchanged ideas and developed projects, and felt as though they were in a real classroom setting.

A pre-questionnaire and a post-questionnaire were administered to the pre-service teachers in order to gather their opinion of the use of the Edmodo social learning environment on a mobile device. A comparative analysis of the results indicated a more assertive and positive opinion once the subjects had had the opportunity to experiment with the network using mobile support. Affordances included increased motivation and compromise, the adoption of a more exploratory learning approach, strengthened communication between students, a collaborative and participatory attitude, the pleasure of interacting in an entertaining and challenging learning environment, and first and foremost, decisive language improvement. The suitable sharing structure and the positive user opinions described in this study indicated that Edmodo could be used effectively on various Internet connected mobile devices. All these advantageous features contributed to the usefulness of Edmodo as a source of scaffolding for mobile language learning.

The fifth article, 'MLab: A Mobile Language Learning Lab System for Language Learners' by Hend Al-Khalifa, Hind Alotaibi and Reem Alamer, presents an innovative proposal for a mobile language lab system in an attempt to overcome the complexity and limitations of conventional labs with the 'anytime, anywhere' formula related to mobile technology. As the authors explain, labs - technological equipment used to assist language teaching and learning - have a long and controversial history

and, despite the several advances from the early audio(-visual) equipment with the incorporation of personal computers, Internet connection and multimedia, still suffer from the discredit gained with their traditional behaviouristic and highly individualistic approaches to language learning. As the authors claim, the functionality of labs has gradually been extended to include such aspects as example-based training on pronunciation, listening skills development, and speech assessment. However, labs layout (with fixed individual booths, etc.) still impose important restrictions for providing an adequate setting for dynamic student interaction to take place, which is a fundamental process in language use and learning. Furthermore, computer labs are usually complex and unstable from a technological perspective, and the potential benefit of the privacy and flexibility that they provide to less assertive students is mitigated by the apprehension caused by the continuous technological demands and problems of lab equipment. MLab, the mobile language lab system designed by the authors, is intended to offer students the majority of language lab features from their own mobile devices. It is based on the principles of ubiquity, multi-functionality, interconnectivity, and what they call the 'psychological comfort' of mobile technology. This concept refers to the high portability and intuitive use of mobile devices for learning purposes, which reduces cognitive load and increases task completion rates. MLab is also low cost, cross-platform and it relies on a series of web technologies and APIs (Application Programming Interfaces) to provide high usability rates.

The authors present the composition and functionality of their system, which is built on previous work. The design of the interfaces is simple and follows the design recommendations for mobile web applications provided by W3C. As the authors explain, the system had a teacher's view, which allowed the management of the students' accounts, learning content and exercises; and the student's view, which showed the learning materials and exercises provided by the teacher. This system was evaluated with a reduced number of English language university students and their teacher. The students were asked to fill out a questionnaire, which revealed a generally positive attitude towards the system. Results indicated high usability rates from both the teacher and students, in terms of factors such as technical complexity, the integration of system functionalities, and consistency. A further affordance of the system was its transferability; i.e., it was not restricted to any language since it depended on uploaded learning materials. However, the authors identified several limitations in their system related to the APIs. Hence, there were security issues associated, which could prevent access to users' devices and there was another issue related to the sustainability of the APIs, which could affect the operation of the system. The article concludes, therefore, with some indications for future work.

The sixth article, "The Role of a Mobile App for Listening Comprehension Training in Distance Learning to Sustain Student Motivation" by Timothy Read and Agnes Kukulska-Hulme, focuses on how a MALL app, ANT (Audio News Trainer), can be designed and developed to support prolonged listening comprehension practise for distance learning students. The authors start off by summarising the literature on developing listening comprehension, noting the consensus there on the need to help students establish a series of strategies that can be applied to the listening task before, during and after it takes place. They go on to note that developing listening skills is particularly difficult for students on distance-learning programs for several reasons,

such as the geographical separation of teachers and students (and also between students) combined with the unbalanced ratio of students to teachers on these courses. The authors discuss the way in which mobile devices such as smartphones and tablets can be effective for language learning, highlighting their possibilities to improve communication, increase learning opportunities, encourage active learning, enhance learner feedback, emphasize task time, and provide easy access to content. Furthermore, their motivational effect can also encourage students to use them above and beyond what they would do with desktop-systems. The authors argue in favour for the effectiveness of MALL to support the development of second language listening comprehension.

Podcasting is subsequently discussed as the most prevalent and widely explored technology for mobile listening comprehension reported in the literature, noting that while progress has been made, the results of research until now are arguably limited since if the students are left alone to practise, they are unlikely to continue over a sustained period of time. The ANT app, which was developed by a team that included the authors, presents a series of structured news recordings to the students (in three levels of difficulty). There are two versions of the app, one of which is connected to the app's Facebook page. This social learning version of the app enables students to write what they have understood from a given recording, which is automatically posted to Facebook. An experiment is described about the use of the two different versions of the app. Research questions are introduced regarding the effectiveness of news for practising listening comprehension in the target language learning in terms of motivation, the way in which the use of social media can amplify the effect, and whether such an app as ANT can be intrinsically motivating for prolonged exposure to the target language? The results of the experiment are presented together with answers to the questions: firstly, that news would appear to be suitable domain for listening comprehension, the up to date nature of the information motivates the listeners. Secondly, that social media such as Facebook greatly increased the use of the app. Thirdly and finally, that ANT does appear to motivate the students to carry on training their listening comprehension skills. The authors include a discussion about the details of these results.

The seventh article, "Profiling a MALL App for English Oral Practice. A case study" by Ana Ibáñez Moreno and Anna Vermeulen, presents some of the overwhelming data regarding the usage of mobile technology which, according to the authors, can bridge traditional and new literacies and encourage creative, multimodal, experiential and hands on learning. While they acknowledge several challenges for its use in education (such as the small size of screens and the keyboards, and the limitation of the presentation and battery life), they also reflect upon its many affordances for that purpose (learner-centeredness, flexibility, autonomy, context-sensitivity, perverseness, user-friendliness, social capabilities, low cost, etc.) and the existence of an enormous number of educational apps, many of which boast significant technical, pedagogical and cognitive validity. The authors argue that there are suitable theoretical frameworks based on pedagogical, linguistic and technological principles, which although they require further consolidation, could be applied systematically in the design of MALL apps. Within the different competences and skills, oral ones offer an attractive domain of application for mobile educational apps. The authors apply a rubric developed in their research group to argue that most apps

lack theoretical and methodological foundations, even those that are popular amongst students.

The authors have developed an app called VISP (VIdeos for Speaking), which can be used anytime and everywhere, within and outside the classroom, and by any independent user, to promote oral practice in English. VISP follows a task-based approach which, as the authors explain, is also part of the communicative approach in a broad sense deriving from socio-linguistic theory. In fact, the app is based on an authentic task: audio description. Audio description was initially created to make visual content accessible to sight impaired people by transferring it into spoken words. Given the intricate nature of this type of narrative (the array of dependencies at the lexical and grammatical levels with the audio-visual input; the semantic cohesion required; the need to select, retrieve, structure and reformulate relevant information etc.), there is a whole field of social, cultural and linguistic related research underlying it that can be applied to educational purposes. The app was tested with two different user groups of different nationalities in a contrastive way. The results showed several differences in the ways of approaching and using the app. In fact, there was an unexpected inverse correlation between motivation and performance, where the group that appeared to be more motivated to use the system did not perform as well as the one that showed less evidence of motivation. Furthermore, one of the student groups was more productive, although they made more mistakes, particularly lexical, while the others were more cautious and worked harder on the tasks. The conclusions to this work were related to the success of the experience and the need to localize the app according to both linguistic and cultural factors.

The eighth article, "Language Learning through Handheld Gaming: a Case Study of an English Course with Engineering Students" by Mercedes Rico, J.Enrique Agudo and Héctor Sánchez focuses on a topic that is being applied to many forms of digital-based learning: gamification. Gamification can occupy either a peripheral role, for example, in a learning system (aimed at keeping motivation levels high, preventing abandonment, etc.), or a central one, as in Digital Game-Based Learning (commonly referred to as Game-Based Learning or GBL). GBL aims at improving the quality of student learning through the use of video games. This strategy is based on the assumption of the positive effect of making learning a playful and enjoyable experience. It is rooted in a new university student profile, who are knowledgeable individuals, technologically literate, and eager to access information and opportunities for learning in novel ways.

Previous studies have demonstrated that video games facilitate students' learning progress and limits dropout from their course. The learning environments in these games are highly dynamic and can be based on creativity, discovery and problem solving. In this research, it was found that students who used video games showed evidence of maintaining their attention and focus, and increasing their reading comprehension ability. In this study, the authors analysed how mobile console technology (with touch-screens, dictation exercises, voice-recognition functions, competitive language games, etc.), used to teach vocabulary, grammar, pronunciation, writing and listening skills, could help students of a second language. Specifically, they aimed to investigate the students' satisfaction and effective learning with this device in and out of the classroom. The students' own claims and the increase in both the quantity and quality of their work showed high motivation levels. The results

demonstrated general evidence that appropriately designed consoles could not only increase students' interest, attention, and involvement in their learning, but also the level of their performance. A fine-grained analysis, however, revealed high levels of satisfaction with the vocabulary, pronunciation, grammar, and listening activities and lower levels for speaking and writing. In order to study effectiveness, sampling had to be expanded over a longer time period. There was evidence of gradual quality improvement in the students' work, which was related to the amount of time they were actively engaged with the learning activities in the console. However, it is important to note the presence of certain inconsistent data, which revealed that additional factors could disrupt this correlation. The authors concluded that although the use of mobile GBL per se could not guarantee learning, there were enough data to suggest that it should be integrated into academic syllabi to improve students' overall language academic performance outside the classroom setting.

3 A final remark

This special edition represents some of the best emerging work in mobile assisted language learning and this introductory editorial attempts to provide some different contexts to organise and understand it; firstly, the historical context of the now-established mobile learning community and, secondly, the less well established communities looking more flexibly at the relations between language, learning and mobile technologies, as the latter become pervasive and ubiquitous [Read *et al.* 10] and all three interact and evolve. Hopefully these together will form the foundations of yet more good and exciting work.

References

[Barcena *et al.* in press] Barcena, E., Read, T., Underwood, J., Obari, H., Cojocnean, D., Koyama, T., Pareja-Lora, A., Calle, C., Pomposo, L., Talaván, N., Ávila-Cabrera, J., Ibañez, A., Vermeulen, A., Jordano, M., Arús-Hita, J., Rodríguez, P., Castrillo, M.D., Kétyi, A., Selwood, J., Gaved, M., & Kukulska-Hulme, A.: "The state of the art of language learning design using mobile technology: sample apps and some critical reflection". *Proceedings of EUROCALL 2015 Annual Congress*. Universitá di Padova, 26-29 August 2015. (in press)

[Blaschke, 12] Blaschke, L. M.: "Heutagogy and lifelong learning: A review of heutagogical practice and self-determined learning". *The International Review of Research in Open and Distance Learning*, 13(1), (2012) 56-71.

[Castrillo *et al.* 14] Castrillo, M.D., Barcena, E., & Pareja, A.: "Preliminary conclusions after the design and implementation of mobile learning language apps for professionals". In *Proceedings of EUROCALL 2014. CALL Design: Principles and Practice*, Groningen: University of Groningen, (2014) 40-46.

[Frohberg *et al.* 09] Frohberg, D., Göth, C., & Schwabe, G.: "Mobile learning projects–a critical analysis of the state of the art". *Journal of Computer Assisted Learning*, 25(4), (2009). 307-331.

[Herrington *et al.* 09] Herrington, J., Herrington, A., Mantei, J., Olney, I., & Ferry, B.. "Using mobile technologies to develop new ways of teaching and learning". In J. Herrington, A.

Herrington, J. Mantei, I. Olney, & B. Ferry (eds.) *New technologies, New Pedagogies. Mobile Learning in Higher Education*, Wollongong: University of Wollongong, (2009) 1-14.

[Park, 11] Park, Y.: "A pedagogical framework for mobile learning: Categorizing educational applications of mobile technologies into four types". *The International Review of Research in Open and Distance Learning,* 12(2), (2011) 78-102.

[Read *et al.* 10] Read, T., Barcena, E., & Rodrigo, C.: "Modelling ubiquity for second language learning." *International Journal of Mobile Learning and Organisation* (Special issue on Mobile and Ubiquitous Technologies for Language Learning), 4(2), (2010) 130-149.

[Traxler, 05] Traxler, J.: "Defining mobile learning". In *Proceedings of IADIS International Conference on Mobile Learning*, Qawra, Malta, (2005) 261-266.

[Traxler, 08] Traxler, J.: "Learning in a Mobile Age". *International Journal of Mobile and Blended Learning*, 1(1), (2008) 1-12.

[Traxler, 13] Traxler, J.: "Mobile Learning for Languages - Can the Past Speak to the Future?" *TIRF Mobile Language Learning (MLL) Papers*. TIRF - The International Research Foundation for English Language Education, (2013) http://www.tirfonline.org/english-in-the-workforce/mobile-assisted-language-learning/mobile-learning-for-languages-can-the-past-speak-to-the-future/

[Traxler & Crompton, in press] Traxler, J. & Crompton, H.: "The Cultural Implications of Learning with Mobile Devices". *Journal of Distance Education in China*, October 2015.

[White & Cornu, 11] White, D. S., & Le Cornu, A.: "Visitors and Residents: A new typology for online engagement". *First Monday,* 16(9), (2011). http://firstmonday.org/ojs/index.php/fm/article/view/3171/3049 (in press).