Research paper

The Future of Foreign Language Instructional Technology: BYOD MALL

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Abstract

This paper describes trends in instructional technology that are influencing foreign language teaching today and that can be expected to increasingly do so in the future. Though already an integral part of foreign language instruction, digital technology is bound to play an increasing role in language teaching in the coming years. The greatest stimulus for this will undoubtedly be the accessibility of Mobile-Assisted Language Learning (MALL), made possible through the exploitation of mobile devices owned by students themselves. The ubiquitous ownership of smartphones and tablet computers among adolescents and adults now makes a Bring Your Own Device (BYOD) approach a feasible alternative to desktop computer labs. Making this work, however, especially in a financially and technologically restricted environment, presents a number of challenges which are the focus of this paper.

Keywords: Mobile-Assisted Language Learning, Bring Your Own Device approach, instructional technology.

1. Introduction

Already today, the contribution of instructional technology to language teaching is well established. What foreign language instructor these days would teach a language class without the support of computer-based multimedia: audio, graphics, video? Likewise, the Internet is regularly used as a teaching resource. There can be little doubt that the role of instructional technology in language teaching and learning will continue to increase in the future. That future, however, is certain to be strongly influenced by two ongoing developments: the use of mobile devices and the exploitation of learner-based technology resources.

Mobile-Assisted-Language Learning (MALL) has in fact been around now for over 20 years. When thinking of mobile technologies, undoubtedly the first thing that comes to mind is the mobile phone. While few people owned mobile phones 20 years ago, mobile phone subscriptions today have surpassed 7 billion, representing a penetration rate of 97% (Dazeinfo.com). In developed countries, over half the adult population already owns a smartphone. Western Europe in particular has one of the highest smartphone adoption rates in the world (O'Neill, 2015). In the US, some 85% of 18-29 year olds are smartphone owners (Pew Research Center, 2015). Moreover, as any senior high school or university teacher in these countries can attest, rare indeed is a student without a smartphone.

However, the first appearance of MALL did not involve mobile phones but rather pocket electronic dictionaries for L2 English (Burston, 2014). It was not until about ten years ago that the size and cost of mobile phones reached a point where their ownership started to become more widespread, especially in Asia, most particularly among university students in Japan. This prompted their use primarily for L2 English vocabulary learning via SMS text messaging to deliver words, translations, definitions and sample sentences for rote learning. More sophisticated MALL applications required the use of a Personal Digital Assistant (PDA), a mini handheld computer with basic programing capabilities. Again, these targeted L2 English and were initially used to take notes, do tutorial exercises, and play vocabulary games.

As technology improved, PDAs added colour screens, multimedia functionality and optional telephone and Internet connectivity. Mobile phones and PDAs in effect merged into what is today called a smartphone with the advent of the iPhone some eight years ago. This quickly gave rise to a host of other smartphone producers, with the Android platform being the most dominant. Likewise, the release of the iPad a couple of years later ushered in the age of the mobile tablet computer with its many Android (and Windows) competitors, which are now increasingly being used to support foreign language teaching. The latest mobile technological innovation is the phablet, a tablet computer with mobile phone functionality, i.e. a large screen smartphone. However, these have yet to make their appearance in MALL applications.

2. Past MALL Applications

From the very beginning, the application of mobile technologies to foreign language learning has above all targeted L2 English, with over 60% of all implementations focusing on ESL/EFL (Burston, 2014). So, too, about three-quarters of all studies have involved post-secondary school learners (university/adult education). Pedagogically, however, it must be said that primary and secondary language teachers have not missed out very much in what MALL has to offer, for to date the vast majority of implementations at all academic levels has focused on very traditional structuralist and audiolingual exercises: vocabulary, grammar, reading and listening comprehension (Burston, 2015). Most notably, except for the use of SMS, the interpersonal communication functionality of mobile phones has gone virtually unexploited. Despite the enormous improvements in the functionality of current mobile devices in recent years, very few MALL implementations have engaged students in interactive, communicative, language learning activities. That being said, though few in number, the most pedagogically innovative MALL applications have in fact been undertaken with younger EFL learners.

A good example of how modern mobile technology can be exploited to support task-based communicative language learning can be found in Tai (2012). This Taiwanese study involved 35 sixth graders, working in groups of between three and four, who were set the task of helping to solve an imaginary museum burglary. Their job was to assist international investigators who could only communicate in English. Learners used smartphones as part of a classroom response system to prepare for an out-of-class task (going to the scene of an imaginary burglary to track down the culprit) in which they used their GPS-equipped devices to collect and share Internet-based data and communicate with each other and their teacher to obtain information and guidance. Subtasks were distributed according to the mode of communication, a caller, an SMS reporter, a secretary for recording and requesting help. On their return to class, learners reviewed and compared the resources they had collected and discussed their solutions, all in English of course.

In sum, as Tai's project demonstrates, even at primary school level, much more innovative and effective foreign language learning can be achieved with mobile instructional technologies than has typically been the case up to now. And the kind of teaching Tai was able to undertake in Taiwan could certainly be replicated at least as well elsewhere. Firstly, the L2 linguistic competence of Tai's pupils was relatively limited. More advanced learners, especially at the high school and university level, could be expected to perform even better. Moreover, Tai's teaching took place in an environment in which the L2 was virtually never encountered out of the classroom. Certainly in the case of English, teachers elsewhere are likely to find the extracurricular environment more accommodating. So, too, Tai's project was actually undertaken in 2010 and mobile technology and accessibility has improved enormously in the meantime.

3. Challenges to MALL integration

Two main challenges face the effective integration of MALL into the foreign language curriculum: technology access and pedagogical methodology.

3.1. Technology Access

Since its inception, MALL has been seriously hampered by a lack of access to suitable technology. Initially, this was because of the limitations of mobile-based technologies. Not much could be done with the PDAs and mobile phones of yesteryear. But even though mobile technology has improved by leaps and bounds, its cost has remained prohibitive for all but a minority of language teachers. With one or two very recent exceptions, any MALL application that has gone beyond the use of SMS on basic mobile phones has had to provide learners with the necessary hardware. This includes the project reported in Tai's study. It is largely for this reason that the great majority of MALL implementations have taken place on University campuses, where research support has been available to fund the acquisition of mobile devices for student usage.

Mobile device ownership, however, in the form of smartphones and tablet computers, has now reached a point where it is feasible to implement a BYOD approach to Mobile-Assisted Language Learning. BYOD, that is to say Bring Your Own Device, is in fact not in the future at all, but is already very much part of current foreign language instructional technology. Every major digital language lab producer, SANS, SANAKO, ReLANPro, Robotel, XCLASS, etc. now markets a version of their product that is accessible to Apple and Android smartphones and tablets. This move to mobile accessibility has largely been spurred by the potential of increasing market share through the exploitation of BYOD MALL

As educational institutions replace their aging labs, desktop installations are bound to give way to mobile devices for very good financial and pedagogical reasons. Firstly, it is much more cost effective to invest in wireless networks and exploit the potential of the mobile devices which learners are already buying, maintaining and replacing themselves. So, too, the use of mobile devices allows any classroom with wireless network access to take on the functions of a language lab when required, thereby reducing, if not altogether eliminating, the need for such facilities. Even in situations, such as primary schools, where learners themselves cannot be expected to provide their own mobile devices, their acquisition for in-class usage is far less costly than that of desktop computer lab equipment. Above all, the use of BYOD mobile devices allows pedagogical activities to extend beyond the computer lab, and indeed beyond the classroom, virtually anywhere, anytime.

Needless to say, digital language labs have their costs, which many institutions – especially in the public sector – cannot afford. For those that can, going mobile is no more expensive, and in fact less so, than traditional desktop lab installations. Moreover,

students are usually provided accompanying mobile apps at no cost. One producer, ReLANpro, even offers schools in Europe and the US a totally free mobile system for up to 30 users. It is called BYOLL (Bring Your Own Language Lab) and can be obtained via online registration (ReLANpro Europe; ReLANpro USA).

3.2. Pedagogical methodology

3.2.1. Theory

While BYOD MALL implementations can, and undoubtedly will, overcome the challenge of technology access, pedagogical methodology remains a critical factor in the successful implementation of MALL. As the example of Tai demonstrates, the effective exploitation of mobile technologies requires careful planning and has to be firmly grounded in learning theory in general and second language acquisition principles in particular. Student activities need to be constructivist, collaborative, learner-centred, task-based, and require communicative linguistic interaction to complete. No less importantly, they need to engage the learners' creativity. When these elements are in place, mobile-based learning can be highly motivating, pedagogically effective, and even fun to undertake.

3.2.2. Practice

While the requirements of pedagogical theory are clear enough, how can BYOD MALL be realized within the practical constraints that most language teachers have to face? The most convincing answer to this question is best given with concrete examples that assume a worst case scenario: teaching in a school environment with no money to spend on technology, only minimal technical support, if any, and no wireless networking facilities. However, as is most probably the case in senior high school or beyond, virtually all students have smartphones and/or tablet computers of their own. Even within such a restricted technological environment, very effective use can be made of mobile devices to promote foreign language learning.

The free ReLANpro mobile system mentioned earlier allows teachers to implement BYOD MALL at least on a small scale, enough to meet the needs of one or two classes and demonstrate to the holders of institutional purse strings the pedagogical effectiveness of BYOD MALL. Using *BYOLL*, teachers can create lessons based on audio and video sources, which students can access on their mobile devices wherever an Internet connection is available. Such lessons can provide preparatory vocabulary/grammar exercises as well as listening comprehension activities that furnish background information related to task-based assignments. Students working in small groups – inside or outside of class – then apply what they have learned to accomplish an assigned task through the collaborative use of the language. In doing so, they use their own mobile devices to communicate with each other as needed via phone, SMS, MMS, Skype, Twitter, whatever meets their needs. Using mobile technology in this way can not only take instruction out of the classroom but bring language learning into the real world. It also exploits not only the mobile hardware and software of learners, but also their technological literacy skills.

Real world language activities can make very good use of student mobile devices to create personal artefacts linked to assigned tasks. For instance, a great variety of activities can engage students in using their mobile devices to take task-related photos (Wong et al, 2011). Students could be told, for instance, that they have a certain amount of money to spend on a birthday, Christmas, or wedding gift for someone. They then do some research on the Internet and go off on their own to some shops, take pictures of possible choices, share their photos and collectively decide which gift they prefer. While such activities would involve out-of-class conversations, how much of this takes place in the L2 very much depends on the competence level of the students and

the ultimate requirements of the task. Follow-up graded in-class oral activities, for example, can have a very positive effect on the use of the L2 in preparatory tasks since they provide rehearsal opportunities which improve final assessed task performance. In any event, discussions and final decisions need to be made in-class to ensure that the L2 is being used. Photo-based tasks are adaptable to any language proficiency level. So, too, they are limited only by the imagination of the instructor, and indeed the students themselves.

Audio and video recordings made with student mobile devices likewise lend themselves well to effective language learning activities. This could be as simple as audio recording the reading of a text out loud and comparing this to a model for pronunciation practice (Papadima-Sophocleous, Charalambous & Mallouris, 2013). Students could similarly use their audio recorders to practice dialogues which they subsequently perform in class. Video recordings could just as readily be made of role plays that students prepare and practice beforehand for instructor feedback (Leis, Tohei & Cooke, 2015). Recorded interviews, audio or video, are other real world activities that students can profitably undertake with their mobile devices. L2-speaking tourists might be approached to inquire where they are from and the places they have visited. With more advanced learners, job-related information could be sought from L2-speaking workers in shops, banks, restaurants, hospitals, etc. (Gjedde & Bo-Kristensen, 2012). As with photo-based tasks, the audio-video artefacts created by students provide the substance for the subsequent collaborative use of the L2 and follow-up activities. So, too, the language level and topics of such tasks can be easily adapted to the linguistic proficiency and personal interests of students.

The GPS functionality of student mobile devices can similarly be exploited for language learning purposes. For example, students can be assigned the task of providing directions for getting from their home to some point of interest, the airport for instance. Treasure hunts are another good way that mobile device GPS systems can be exploited in language learning activities (Freiermutha, 2015).

In all these BYOD mobile-assisted activities, the basic principle is to link projects to tasks that students have to prepare and complete through the collaborative, interactive, use of the target language. As these examples demonstrate, provided students have their own mobile devices, MALL can be innovatively and effectively implemented even in the absence of institutional financial or technical support. Being able to teach in a wireless networked environment, which if not already a reality certainly should be in the foreseeable future, allows even greater exploitation of mobile technologies. Most notably, the vast resources of the Internet, including the work of students themselves, can be accessed and shared at any time by teachers and students alike. Likewise, Internet access opens the door for communication with remote native speakers, for example, via small group tele-collaborative exchanges.

4. Final practical considerations

While BYOD MALL is certainly feasible now, its implementation is subject to a number of practical challenges. Many primary and secondary schools flatly prohibit the student use of mobile phones on campus. There are very good reasons for this as they can be very disruptive. No teacher wants students to be texting or playing games in class. Disruptive technology, however, is nothing new in the classroom. Students have been sneaking notes back and forth in class for as long as there have been pencils and paper to allow them to do so. Yet schools do not forbid students to use paper and pencils on campus. Teachers who find themselves in a situation where student use of mobile phones is banned need to talk to the powers-that-be about relaxing this restriction to allow the pedagogical use of mobile devices in class.

Engaging in BYOD MALL is time-consuming. It requires of the teacher considerable preparation to scaffold task-based assignments and integrate them into the curriculum with follow-up communicative language activities. So, too, the implementation of task-based activities requires substantial class time. Collaborative assignments need first to be discussed by students to decide details and allocate responsibilities. The results of outside activities also have to be brought back to the classroom for subsequent discussion and finalization of the project. Student-centred classroom discussion, however, is time well spent since it engages learners in the communicative use of language and in activities that foster the negotiation of form and meaning which are essential to language acquisition.

The logistics of disseminating digital resources to students, of collecting, sharing and returning their work also requires special attention. There is, however, a readily available solution to this challenge and that is to create online class storage folders, for example on a freely accessible GoogleDrive. Being cloud-based, these are then accessible anytime/anywhere from any device, desktop, laptop, netbook, tablet, smartphone.

Lastly, teachers, no less than students, learn best through social interaction. Two heads are better than one. When setting off in the direction of BYOD MALL, working collaboratively with colleagues is essential.

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