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LANGUAGE LEARNING TECHNOLOGY



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ABSTRACT

As has happened with PCs, the reduction of operating systems to two primary competitors, iOS and Android, coupled with a large and ever growing user base, has made it worthwhile for programmers to design mobile applications for both platforms. The end result for MALL is that it is now becoming possible to adapt its exploitation to what is known as a BYOD (Bring Your Own Device) environment. Within the classroom this is beginning to happen with the appearance of BYOD systems designed to control audio-video resources, interactive whiteboards, lab computers and in-class media broadcasting. BYOD systems have great potential application to learner-centered, task-based, collaborative instruction, in and out of the classroom. In planning updates and replacements for existing computer facilities, those responsible need to be considering available BYOD resources. To the extent that BYOD systems are integrated into the language curriculum (or indeed any discipline), considerable savings can be

made by reducing the need to continually replace client computer equipment. What is needed to bring the outside world into the learning process is the ability to communicate, take photos, make videos, record audio, take notes and share data. The hardware and software applications to accomplish this already reside on most smartphones, tablet computers and full-featured media players. A number of free and low cost of mobile-accessible programs exist that allow the creation a ubiquitous technological learning environment. Technologically and pedagogically, the time is right to implement BYOD MALL and in the process bring the vast resources of the outside world into the learning process.

INTRODUCTION

During the 20 years that it has existed, the technological base of Mobile-Assisted Language Learning (MALL) has progressed from Personal Digital Assistants (PDAs), mobile phones and MP3 players to smartphones and, most recently, tablet computers. While this technology has improved immensely over this period, to this day the exploitation of MALL has been, and continues to be, hampered by the entrenched incompatibility of mobile devices. Up to now, with the exception of projects based on SMS (text messaging) or podcasting, the only way of insuring that all potential students could access a MALL application was to purchase equipment and lend it out for the duration of a project. Not surprisingly, very few MALL projects have led to large scale integration into the curriculum (Burston 2014a; Burston 2014b). However successful initial experimentation may be, rare indeed is the educational institution with resources to acquire the mobile devices needed to extend MALL from individual classes to an entire program.

Worldwide, already the majority of new mobile phone sales are smartphones (Gartner, 2013). Among the student population in developed countries smartphone ownership is even higher. The phenomenal growth of tablet computer sales, 60% in 2013 alone (The Guardian 2013), leaves little doubt that among students they will quickly become as ubiquitous as smartphones. While operating system incompatibility remains a fact of life with mobile devices, the leading Apple and Android smartphone operating platforms work equally well on corresponding tablets. As has happened with PCs, the reduction of operating systems to two primary competitors, coupled with a large and ever growing user base, has made it worthwhile for programmers to design applications for both platforms. If and when Windows makes good on its attempts to go mobile, compatible applications for that platform will similarly be forthcoming. The end

result for MALL is that it is now becoming possible to adapt its exploitation to what is known as a BYOD (Bring Your Own Device) environment. Freed of the necessity of providing mobile devices for student usage, educational institutions can at last approach the integration of MALL into the curriculum independently of operating systems.

BYOD CONTROL SYSTEMS

Technologically, within the classroom this is beginning to happen with the appearance of BYOD audio-video control systems (Crestron) which can manage amplifiers, audio and video players, and projectors by whatever Apple/Android mobile device an instructor may bring into the class or lab. Interactive whiteboards can similarly be controlled by Apple/Android mobile devices (Mimio). Likewise, computer management systems already exist (NetSupport School, Schoolshape Language Laboratory) which allow instructors to control all the computers in a lab from their Apple/Android smartphones or tablets. They can lock student screens, allow access to designated web sites, create student groupings, whatever is needed to keep learners on task. Even better, the same kind of computer management is possible using whatever Apple/Android mobile devices students may bring into the classroom. Multi-platform apps (Nearpod, Netop) are also now available that allow the in-class broadcasting between instructor and student mobile devices of slide presentations, videos, and web pages as well as simple polls and quizzes. Instructors can monitor student activity in real time or through an online database system. Such systems can also provide asynchronous access for independent out-of-class student usage via mobile or desktop computers, thus making them a truly ubiquitous “anywhere, anytime” learning tool.

LEARNER-CENTERED INSTRUCTION

Integrating MALL into the foreign language curriculum, however, is not just about AV and computer management controllers or media broadcasting systems, which are by definition teacher-centered. While there is a need for teacher control of resources in the classroom (or lab), if MALL is to be incorporated into the curriculum, its implementation has to go beyond mobile-based teacher-centered control systems.

BYOD systems have great potential application to learner-centered, task-based, collaborative instruction, in and out of the classroom. An excellent example of how this potential can be realized is demonstrated by Tai (2012). In her study of Taiwanese school children, Tai systematically exploited telephonic, Internet and multimedia resources to allow learners to collect and share data and communicate with each other and their teacher. Smartphones were used to integrate problem solving tasks into an L2 English curriculum. Learners used their mobiles 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 phones to collect and share Internet-based data and communicate with each other and their teacher to obtain information and guidance. On their return to class, learners reviewed and compared the resources they collected and discussed their solutions thus generating authentic interaction and negotiation of meaning among language learners. Tai's project was based on the use of a particular mobile device, which was purchased and loaned to students. However, it would be possible to undertake the same activities in a BYOD environment, at least with adult students who could be expected to already possess their own mobile devices: smartphones, tablet computers, digital still/video cameras, MP3 recorders/players. In a typical university environment equipped with a Learning Management System (LMS), student learning activities could be further enhanced through the exploitation of device-independent, web-based, computer-mediated communication affordances (chats, blogs, wikis).

INSTITUTIONAL SUPPORT FOR BYOD

As mobile computing becomes ever more entrenched in the lives of students (no less than that of their instructors), BYOD systems are bound to increasingly shape the future course of CALL. Given the pace of technological obsolescence, five years is about the maximum useful life span of even today's most up-to-date computer facility. Those that have been in existence already for a couple of years, which would be the great majority, are already due for updating if not complete replacement. In planning for this eventuality, those responsible need to be considering available BYOD resources.

Needless to say, securing institutional funding for computer facility upgrades is a major undertaking requiring convincing arguments. While funding bodies may or may not be persuaded by the potential of BYOD systems to increase student motivation and improve learning outcomes, which innovative learner-

centered applications can convincingly demonstrate, the holders of institutional purse strings are bound to be receptive to ways of making economies. As a mid-/long-term money saving investment, BYOD systems are singularly attractive. With them, any multimedia-equipped classroom with wireless computer network connectivity can function as a computer lab facility. Since mobile devices are best suited to complement rather than replace desktop computers, there will continue to be a need for computer labs. However, the number of existing ones can be reduced, or at least the construction of new ones avoided. To the extent that BYOD systems are integrated into the language curriculum (or indeed any discipline), considerable savings can be made by reducing the need to continually replace client computer equipment, which can be supplied and maintained by students themselves. University resources would be more effectively spent creating a ubiquitous wireless technological infrastructure accessible everywhere on campus. Even if, for reasons of equitable access, institutions need to subsidize the student purchase of suitable mobile devices, this would arguably still be less costly than perpetually maintaining and replacing the current number of lab computers.

BYOD MALL APPLICATIONS

The most advanced LMS (Canvas) already provide functions that accommodate mobile device access: video conferencing, email, multimedia chat, discussion forum, wiki, blog, cloud-based data storage and sharing. In the mid- to long-term, competition is sure drive other LMS providers to follow suit. In the meantime, there exist a number of free and/or inexpensive applications to allow the BYOD implementation of innovative methodologies that can liberate language learning from the confines of the classroom. Many of these can be directly incorporated into existing LMS.

What is needed to bring the outside world into the learning process is the ability to communicate, take photos, make videos, record audio, take notes and share data. The hardware and software applications to accomplish this already reside on most smartphones, tablet computers and full-featured media players (e.g., iPod Touch). Google+ provides a suite of interrelated mobile-accessible applications that are available without cost. Gmail offers a multimedia e-mail facility that is integrated with Hangout, an audio-video chat application that allows up to ten students to simultaneously communicate and share data with each other. Data can be stored on a cloud-based GDrive that synchronizes files on whatever device a student uses, stationary or mobile. Google Docs links to the

GDrive to provide a platform for the collaborative creation of multimedia documents. Another free application is Weebly, which allows students to create their own websites and blogs, accessible via mobile devices. For \$40 per year instructors can add course management and monitoring features for up to 40 students. Evernote provides a free note taking and multimedia data storage facility that synchronizes from any Windows, Mac, iOS or Android device. For \$2.50/month per student, instructors can add group creation and monitoring facilities to Evernote, thus allowing students to work collaboratively on projects.

Fostering language learning within a ubiquitous BYOD technological environment presupposes competence in the operation of these technologies, for instructors no less than students. So, too, having students create and manipulate multimedia resources presupposes basic audio-video editing abilities that instructors and their students need to acquire. While certainly not to be taken for granted even among “digital natives”, such skills are not difficult to acquire and in any event are rapidly becoming expected of any educated person.

CONCLUSION

Over the years, a number of factors have combined to keep MALL out of the mainstream of foreign language instruction. Technologically, it has only been since the advent of smartphones and especially tablet computers that the multimedia resources needed to support language instruction have been readily available. But even with this hurdle overcome, the problem of mobile operating system incompatibilities has remained a major obstacle to the widespread integration of MALL into the curriculum. Pedagogically, too, it must be admitted that MALL applications have left much to be desired, with teacher-centered tutorial programs still the norm. However, dual iOS/Android platforms now allow applications to run on the majority of smartphones and tablets. So, too, as more recent innovative implementations attest, substantial curricular integration of MALL is possible when mobile devices are exploited as part of a learner-centered, constructivist, approach that provides ubiquitous access to learning resources. The key to realizing this potential lies in BYOD approaches to MALL in which personally owned mobile devices are used to complement desktop (and laptop) computer facilities anywhere, anytime in the fulfillment of task-based activities. Technologically and pedagogically, the time is right to implement BYOD MALL and in the process bring the vast resources of the outside world into the learning process.

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Jack Burston holds the position of Honorary Research Fellow in the Language Centre of the Cyprus University of Technology. He is a language-teaching specialist with a formal background in theoretical and applied linguistics, second language acquisition and testing. He also has considerable expertise in computer-assisted language learning, foreign language software evaluation, language centre design and professional faculty development. His current research is focused on Mobile-Assisted Language Learning. Jack has been a member of the Editorial Board of the *CALICO Journal* since 1995, served as Software Review Editor of the *CALICO Journal* for 13 years and is a former member and chair of the CALICO Executive Board. He was the Editor of the *IALLT Language Center Design Kit* and the *Digital Language Lab Solutions* volume.

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PRODUCT CONTACT INFORMATION

Canvas

<http://www.instructure.com/>

Crestron

http://www.crestron.com/products/crestron_mobile_apps/default.asp

Evernote

<https://www.evernote.com>

Google+

<https://plus.google.com>

Mimio

<http://www.mimio.com/en-EM/Products/MimioMobile-Application.aspx>

Nearpod

<http://www.nearpod.com/>

Netop

<http://www.netop.com/>

NetSupport School

<http://www.netsupportschool.com/>

Schoolshape

<http://schoolshape.com/language-lab?gclid=CKnH1p6wqrkCFYSV3god0jcA6w>

Weebly

<http://www.weebly.com>