Providing Every Student with an iPad as a Means of Helping Develop Korean EFL Digital Literacy

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Abstract

The predominant uses of English by non-native speakers will increasingly be online, in using English language digital resources, and in computer-mediated communication with other non-native speakers of English. That these uses are computer-mediated has profound implications for Korean learners of English. For Korea to be competitive in the global economy, Korean EFL should encourage L2 Digital Literacy in English. Korea already enjoys an enviable status as the most wired nation on the planet, with the fastest Internet connections in the world. But computer facilities in Korean educational institutions need drastic reorganization. The opportunities for computer-mediated second language learning need to be vastly increased, particularly for native teacher English classes. Multimedia-capable, mobile web solutions need to be provided that put the Internet into the hands of all students and teachers. Wi-Fi networked campuses already allow any campus space to act as a wireless classroom. A teacher's computer console with high-speed Internet access and OHP is required in every classroom. All students should be provided with adequate computing facilities, that are available anywhere, anytime. This is now feasible through adopting the strategy of providing every student, on enrollment, with a Wi-Fi+3G enabled Apple iPad.

Keywords- iPad; iPhone; iOS 4; L2 digital literacy; EFL; Korea.

I. Introduction

Digital resources play an increasing role in Second Language Acquisition (SLA), with more attention being given to intentional instruction in English as a Foreign Language (EFL) Digital Literacy (in students' Second Language (L2) English). This is in part due to growing recognition of three key factors that have been identified, in a number of papers such as [1] and [2], as impacting contemporary SLA. Firstly, the predominant use of English by non-native speakers is increasingly in communication with other non-native speakers, and not with native speakers. Secondly, the emergence of English as a global language has meant that desired online resources and discourse are mainly in English. Thirdly, a critical threshold is fast approaching whereby the majority of interpersonal communications will have become computer-mediated, rather than face-to-face.

As argued in [3, 4] these three factors indicate that the predominant use of English by non-native speakers will be firstly in navigating English language digital resources, in locating, editing, and contributing to online content in English; and secondly in computer-mediated communication with other non-native speakers of English. That both of these envisaged predominant uses of English by non-native speakers are computer-mediated has profound implications for SLA, and specifically for Korean learners of English. For Korea to be competitive in the global economy, we should in EFL nurture and develop L2 Digital Literacy in English. But how best to do this?

As Sutter observes, Korea enjoys an enviable status as the most wired nation on the planet, with the fastest Internet connections in the world [5]. But computer facilities in Korean educational institutions are currently in need of revisualization and drastic reorganization. In particular, the opportunities for computer-mediated second language learning need to be vastly increased, particularly for native teacher English classes. Fixed desktop computer labs need to be replaced with the provision of multimedia-capable, mobile web solutions that put the Internet into the hands of all students and teachers. Existing computer labs are mainly designed for and suited to class use in

computer applications, where students do not interact with one another, but focus attention on their individual screen, with attention also paid to the teacher, and her OHP class screen. This arrangement mitigates against encouraging face-to-face collaboration and networking, whether structured or unstructured, as would commonly take place in the work-place, and which is usual in L2 classrooms where pair and small group activities are commonly held, or where teacher-student and/or student-student interactions are demonstrated to the class.

These existing fixed computer labs should therefore be complemented with a comprehensive mobile solution. This comprises: 1. Wi-Fi networked campuses that allow just about any campus space to act as a wireless classroom; 2. the provision of a teacher's computer console in almost every classroom with high-speed Internet access, OHP, and classroom printer; and 3. the provision of systems that provide all students with adequate computing facilities, anywhere, anytime. This latter provision of almost ubiquitous computing, which has previously been impractical, has now become feasible through providing each and every student, on enrollment, with a Wi-Fi+3G enabled Apple iPad (or similar tablet computing device), which could be used in tandem with students' privately owned iPhones, or other smartphones.

II. Introduction of the iPad

In January 2010, Apple announced the iPad tablet, featuring a 9.7-inch, 1024 x 768 display with 16-, 32-, and 64-GB capacities. The 13.4mm thin 0.68kg iPad is available in either Wi-Fi only, or in Wi-Fi+3G-capable models. At its release, Steve Jobs stated that the tablet puts the Internet into the hands of the public [6]. The iPad as shown in Fig. 1 below, which is designed for using fingers on a touch screen as with the iPhone rather than mice as with PCs, will likely revolutionize education. This should be particularly evident in language education, because of the integrated multimedia and telecommunications features that have particular relevance to language learning. The iPad could have significant impact on Second Language Acquisition, through putting L2 English use of the Internet firmly into the hands of Korean EFL learners.

In the US, Warschauer has in a variety of papers consistently noted the increasing notion that is being given to mobile computer-mediated language learning, as American schools create one-to-one classroom environments mainly through connecting laptops wirelessly to the Internet [7]. He argues convincingly that computers and the Internet are highly disruptive

technologies that require extensive organizational restructuring and professional development for successful use [8]. Progressive universities such as the Abilene Christian University have for some years provided students with free iPhones, and integrated the iPhone into their curriculum [9]. Web apps are used to turn in homework, look up campus maps, watch lecture podcasts and check class schedules and grades [10]; and for classroom participation, polling software allows shy students to make choices without risking embarrassment. Cohen reports that in 2008, Oklahoma Christian University made Apple hardware mandatory for incoming freshmen, providing Apple MacBooks to all incoming freshmen and faculty who attend a new student orientation [11]. At Francis Tuttle Technology Center, according to Hamblin [12], pilot projects using iPhones and Kindle e-readers are enabling administrators to weigh technical and financial considerations and students might even save up to 50 percent on the cost of textbooks by buying them electronically. Computer mobility is regarded as being key and critical to the future, providing ways to get people access to learning content, no matter where they are; iPhones and iPod touches are being evaluated for use by nursing students to carry medical reference books electronically instead of requiring them to lug 5kg books about the clinics. Farivar reports that in 2009, all 550 of Aoyama Gakuin University's students, and some staff, received free iPhone 3G's, which are also used to track attendance by taking advantage of their inbuilt GPS [13].

Korea enjoys a high level of broadband Internet penetration, with extensive 3G coverage and provision of free Wi-Fi hotspots such as Lotteria and Starbucks. While many tertiary institutions offer Wi-Fi networking for staff and students, the use of computers in class is constrained by several factors: firstly, institutional computer facilities are limited, and demand, particularly at exam time, may exceed supply. Secondly, where computer labs are available, these tend to be desktop computers in fixed arrangements as in Fig. 3 below. These likely spring from dated administrative perceptions, i.e. that computing is a special kind of education, separable from general education, that takes place statically, and primarily in individual relationship to a teacher. But fixed computer labs do not enable the flexible groupings of students that typically occur in EFL classes, where students frequently alternate between whole-class activities and diverse individual, paired and group tasks, as shown in Fig. 2 below. While educational theorists such as van 't Hooft promote the importance to pedagogy of connection, collaboration

and networking, the architecture of existing Korean educational computer facilities mitigates against hybrid online/face-to-face collaboration and against the integration of computer-mediated learning with traditional learning that blended learning aims to achieve. Thirdly, few Korean students bring laptop computers to class [14]. Fourthly, while smart phone usage in Korea is high, the small screen and keyboard size, limited applications and data cost limit their intentional use in class. Fifthly, many native English-speaking teachers faced with administrative wariness towards innovation, tend towards caution in their approach to educational technology, and lack the skill sets necessary to successfully implement computer-mediated learning in their classrooms, a reflection of reactionary administrative policies that have yet to absorb the realities of Web 2.0+ thinking [4].

But student adoption of new digital technologies is increasing exponentially and, as argued elsewhere in [15], is affecting student expectations of how teaching and learning should occur. Simultaneously, EFL textbooks are merging with digital media [16]; and more and more teachers are integrating online placement and progress tests, and web-hosted Learning Management Systems into their courses [17].

Fig. 1. The Apple iPad, with a few of the 140,000 apps that were already available by the release date
(courtesy www.apple.com)

The relationship to digital media in the classroom is evolving from that of a precious Internet that can only be accessed as a specialized scarce resource, to that of the taken-for-granted Internet as constant companion. The iPad completely fits this new paradigm, as it popularizes it.

III. Implementing EFL Digital Literacy

A. Use Existing Facilities to Strengthen EFL Digital Literacy

Elsewhere, paper [18] recommends ways to encourage EFL student digital literacy in English, which recommendations were made within a cognitive framework of using existing facilities more creatively. In that paper, teachers are encouraged to move from singular use of the traditional classroom to a more blended or hybrid form of education that combines traditional classroom instruction with computer-based language learning. Tasks can be computer-mediated, accomplished by students in their own time on computers in the university, at home, or in PC rooms, and submitted online. Classes can be held intermittently in existing computer labs.[1] Quizzes and exams can then be set online, to be conducted in existing computer labs, using Internet-hosted exam writing and management services,[2] but with care taken to allow for potential student cheating,[3] server outages and loss of data. Students can be encouraged to use online resources more, particularly in the target L2 language, here English (e.g. using http://www.google.com and http://wikipedia.org in English). Teachers are advised to implement a computer-based Learning Management System, such as Moodle (see http://moodle.org) together with hosting services such as http://ninehub.com) and to force that LMS to use English only [19].[4] These techniques will help develop desired L2 digital literacy skills in English.

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[1]   A ratio of one computer lab session to about every four scheduled traditional class sessions seems to be adequate, and can usually accommodate in-class tasks, quizzes and exams.

[2]   Cognero, a sophisticated full-featured online assessment system that is being beta-tested, allows the teacher to manage content, create and assign tests, deliver tests through a secure online test center, and to have ready access to complete reporting and data-dissemination. See http://www.cognero.com/

[3]   The main problem, as yet resolved, is to prevent online cheating through instant messaging, email, or cell phone SMS.

[4]   Moodle's strengths include that it is free, and flexible: it is open source software, so that users are free to adapt and modify it.

Fig. 2. Flexible groupings of students typically occur in EFL classes, with groupings often rearranging frequently during any class to allow for different group sizes for different tasks and different conversational partners…

Fig. 3 … but fixed desktop computer labs tend to inhibit face-to-face group collaboration while encouraging cheating in online exams

B. The iPad as a Comprehensive Solution

But the release of the Apple iPad and the iPhone OS 4.0 has provided a potential game-changer that will likely revolutionize education, and one which is particularly well suited to second language learning environments. The key advantage these developments provide, as Jobs articulated in his iPad presentation [6], is that they put computing and the Internet firmly into the hands of the users, who in this context are EFL/ESL students and teachers. The Internet has emerged as a fast-developing powerful educational tool; but heretofore it has been regarded as something special, that needs to be accessed indirectly - one must locate a computer, make sure that it is connected to the Internet and is multimedia-capable, and then rather self-consciously do work on the computer on the Internet. But the advent of mobile computing through smart phones like the iPhone and a series of increasingly portable laptops that have perhaps culminated in the MacBook Air, has signaled the transition to a new paradigm. The touch-screen iPad fully recognizes and exploits this paradigm - that the Internet is becoming - or has already become -

something that is no longer special, but something that is to be taken for granted, that (conceptually) is always available anywhere, anytime. Suddenly, the stored experience, knowledge and wisdom of mankind is becoming immediately accessible, as through computer-mediated telecommunications, the distant is becoming proximal. Students are becoming able to access learning content wherever they are and whenever they want.

C. Advantages of a Comprehensive Solution

The advantages of this comprehensive solution include:

- Dedicated computer labs are no longer required for SLA, hence students also do not need desktop computers, complex cabling, or computer desks. Any classroom space can in principle be used with the iPad, whether used on existing writing desks or on the lap.
- As blended systems develop, textbooks are rapidly evolving from hard copy physical items that have to be carried, and that become obsolete every 3-5 years, to e-texts, a phenomenon that

needs to be taken into consideration when selecting textbook series, as discussed elsewhere in [16]. Many of these e-texts are adopting the emerging e-Pub standard format; they can be downloaded onto the iPad as Apps, and can be updated frequently. The student only needs to carry and to bring to class her iPad, on which have been installed all of the e-texts needed for all of her subjects.

- Slikva reports that publishers can create hybridized content that draws from audio, video, interactive graphics in books, magazines and newspapers, whereas paper layouts are merely static [20]. The e-texts can readily link to multimedia digital resources and telecommunication services.
- Using the open e-Pub standard, institutions can therefore customize existing or create their own e-texts, so that these can be integrated into customized institutional, departmental and teacher-implemented learning management systems.[5]
- Student collaboration can be encouraged with suitable tasks that include online components, and that can be undertaken both more formally in class and informally by loose groupings of students in libraries, unused classrooms, campus cafes, and off-campus at Wi-Fi-enabled hotspots that students may frequent, such as Starbucks, Lotteria etc.
- Multimedia capability together with telecommunications means that students can engage both within and outside class in L2 English videoconferencing - which is free using Skype video - both locally and internationally. EFL class students often complain about the lack of other English speakers with whom to converse, so L2 videoconferencing may come to be regarded as a common and normal activity which meets that demand through distance conversation. Fig. 4 below illustrates my Korean EFL students of Sejong University, Seoul desktop videoconferencing with Prof. Obari's Japanese EFL students of Aoyama Gakuin University, Tokyo, with both parties using their L2 English.

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[5] Both Storyist Software and Scrivener now allow easy conversion of a file to ePub, by simply selecting it from the choice of export formats. The iPad is poised to make the ePub format the lingua franca of electronic books, in the same way that the advent of portable digital music players, especially the iPod, made the MP3 format the de facto standard for audio. See http://www.macworld.com/article/150817/2010/04/epub_ipad.html

- As van Wyk explains, the iPad is simple to use [21]. Once the student is registered with the iPhones Store, which process the educational institute could take care of as part of enrolment administration, software can be installed in class by running the App Store application, which does not bother the user with choices during the installation process; no DVDs, CDs or serial numbers are needed. Pre-existing user files such as documents are installed via synchronization to those stored on another computer, which for student files would logically be their teacher's class computer (to which would be networked a classroom printer for controlled student use). There is no way of choosing where the student documents are placed on the iPad, which in this context is of advantage; once synchronized, the documents appear for their respective applications.
- Even better, these Apps can be pre-installed by the IT department of the institution before provision of the iPad to students. While initially this has required iTunes to set up the iPad, and for installing in-house applications, Welch shows that iPhone OS 4 (which supports the iPad as well as the iPhone) now provides institutions with the ability to distribute applications wirelessly [22]. The capacity to push applications from a central location via Wi-Fi or 3G means far less work, and less worry about iTunes being up to date (or even installed). Colleges are able to wirelessly manage student iPads without even needing to touch iTunes.
- Required iPad applications are cheap, so costs could be absorbed by educational institutions. Loyola reports that Apple have announced a new version of iWork designed specifically for the iPad [23]. iWork is Apple's productivity software suite, which includes Keynote (presentation slides), Numbers (spreadsheets), and Pages (word processing). The new iWork for iPad suite takes advantage of the iPad's multitouch input, so slides in Keynote, columns in Numbers, and text and graphics in Pages can be rearranged by tapping, and dragging a finger. An on-screen keyboard appears when text needs to be typed. The iWork for iPad apps can import iWork '09 and Microsoft Office documents; when creating documents in iWork for iPad, documents can be sent in iWork '09 and PDF formats. iWork documents are synced between a Mac and the iPad using iTunes; the iPad will work with a Dock Connector to VGA adapter so

the iPad can connect to a projector to display Keynote slides on a screen during a meeting. The iWork for iPad apps will be available at the iTunes App Store, at just US$10 each.

- A benefit for students is that iPad/iPhone apps are somewhat sandboxed from one another - data from one application isn't generally available to other applications. Application storage can't be inadvertently overwritten by another application.
- The platform is simple, intuitive, and highly usable for home computing tasks such as viewing photos, listening to music, and watching movies. The underlying organization and architecture of the iPad does not need to be understood - the apps (according to Loyola) just work.
- Security problems commonly encountered on PC platforms, such as malware and viruses, are unlikely to be encountered.

*D.   The Significance of iPhone OS 4 -
        now renamed iOS 4*

Moren reports that the announcement of iPhone OS 4 in early April focused on seven "tentpole" features: multitasking, folders, Mail, iBooks, Enterprise features, Game Center, and iAd [24]. The OS was renamed iOS 4 in early June [25]. While folders, iBooks and particularly Enterprise features are relevant, the most significant feature for use of the iPad in SLA is multitasking. According to Snell [26], Apple is achieving the appearance of this through a combination of app-switching features and background processes managed by the operating system itself. This meets student productivity needs to sometimes use several apps to perform a task, and to switch rapidly between them, e.g. using Safari to find and download images for a task in Pages. Apps will also be able to be frozen, and will pick up right where they have been left. They will also be able to perform tasks in the background: for example the push-notification scheme; background audio; VOIP - so that Skype will allow conversations to continue when switching to another app and to receive incoming calls; GPS tracking of location; Local Notifications; and task completion. These features should therefore satisfy issues of app switching, streaming audio, and location awareness.

E.   Student Use of the iPhone with the iPad

A limitation of the current iPad is the absence of a camera, with which to capture both still photos and video. Although this is expected to be rectified in later releases of the iPad, the portability of the iPhone and its popularity in Korea, together with the compatibility of iPhone and iPad which both run iOS 4 (the renamed iPhone OS 4), mean that the iPhone camera can readily be used to capture photos and video, and upload them to the iPad. Other smartphones offer a similar capability.

A front-facing second camera in iPhone 4 and FaceTime video-chatting support in iOS 4.0 favors face-to-face video-conferencing [25], though initially this is only available for iPhone 4 to iPhone 4 communication, with both phones using Wi-Fi. Groups may prefer to view images together on the larger screen of the iPad and use an iPhone for video capture.

IV.   Conclusion

It is now apparent that the primary use of English by non-native speakers will increasingly be computer-mediated, whether contributing to and making use of online resources, or in distance telecommunication with other predominantly non-native speakers. Recognizing this, there is a critical need to strongly develop student L2 Digital Literacy in English. This might effectively be achieved by taking full advantage of Korea's high level of broadband penetration, by comprehensively upgrading Internet-connected computer facilities, so as to make them available to all students anywhere, anytime. An effective means of accomplishing this is, firstly, to saturate campuses with Wi-Fi access. Secondly, ensure that every classroom has a teacher's computer with high-speed Internet access, OHP and networked printer. Thirdly - and critically - provide every student on enrollment with a Wi-Fi+3G iPad tablet on which are installed Apps and e-texts that are Wi-Fi managed by their IT department. Such a bold and imaginative national strategy, which puts the immense benefits of the Internet directly into the hands of all students and teachers, would greatly enhance Korea's creativity, productivity, and its competitiveness in the digital global community.
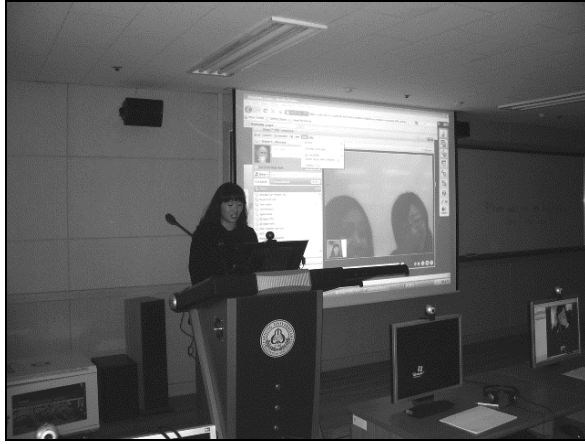
Fig. 4. Korean EFL students of Sejong University in Seoul are shown videoconferencing with Obari's Japanese EFL students of Aoyama Gakuin University in Tokyo, with both parties using their L2 English

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