The non-Ubiquitous classroom of the 21st Century

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INTRODUCTION

U- Japan - The Vision

Most people not familiar with Japan have this image of a country that is bursting with technology and technologically savvy citizens. While this is possibly true in some schools, universities and work places, I have not found it to be so in the universities I have worked at. In fact, I would consider most Japanese schools and universities to be far behind their corresponding institutions in most other first world countries and the students at these educational institutions to be not as technologically competent as their counterparts in other OECD countries.

In 2001 the Japanese government realized that Japan was falling behind in the technology race and the Japanese Cabinet launched the "e-Japan Strategy". (Cabinet Office, n.d.). In 2005 this was replaced by the u-Japan Policy put out by the Ministry of Internal Affairs and Communication (MIC, n.d.). The "u" in the u-Japan Policy is for ubiquitous which can be defined according to the Merriam-Webster dictionary as "existing or being everywhere at the same time," "constantly encountered", and "widespread". (Merriam-Webster n.d.). When applying the concept to technology, the term ubiquitous implies that technology is everywhere and we use it all the time.

The Research Center for Educational Technology at Kent State University defines ubiquitous computing environments as " learning environments in which all students have access to a variety of digital devices and services, including computers connected to the internet and mobile computing devices, whenever and wherever they need them..... (it) includes the idea of technology being always available but not itself the

focus of learning." (Kent State University n.d.)

The motto for the u-Japan Policy is "Working towards realizing the ubiquitous society by 2010 in which anyone can easily access and use a network anytime from anywhere and from any appliance." It also expands the "u" to include the characteristics of the network - universal, user-orientated and unique (MIC 2005). In the ambitious and aggressive governmental initiatives, higher education was expected to play a critical role in the creation of a seamless ubiquitous society through research, development, implementation and dissemination of mobile technologies in teaching and learning. The national efforts in developing and utilizing the information and communication technology (ICT) have made technologies widely available to the Japanese people (Zhang 2008).

The University Establishment Standards, which were revised by the Ministry of Education, Culture, Sports, Science and Technology (MEXT 2006) in 2006, now allow regular on-campus students to obtain up to 60 out of the required 124 credits for a bachelor's degree through e-learning. Also universities may employ a variety of communications media such as the internet, and learning technologies such as video and audio for courses or learning experiences that are educationally equivalent to the traditional face to face learning.

Another advantage that Japan would seem to have in the technology race is that there are already a wide array of ubiquitous technologies widely available and used. Most cell phones in Japan use 3G or higher telecommunications technology with multiple functions including internet, GPS navigation, digital camera, video recording, TV and even body fat calculator. (Telecommunication Carrier's Association, 2010) and most young Japanese own at least one cell phone with multiple functions. According to the latest available statistics (April 2010) from the Telecommunication Carrier's Association there were 112.7 million cell phone subscribers and 97% of these were for 3G or higher phone technology. Japanese students on the whole are more than comfortable using their cell phones for the internet, contacting friends, taking photos, finding their way, internet shopping and listening to music. Why then are most of the students I teach not interested and unaware of other important technologies, even when the government has been aggressively promoting their accessibility and use for over 10 years? This paper explores some of the possible reasons for this and looks at one example of what can be done to try and improve students' interaction with technology.

BACKGROUND

U - Japan - The Reality

Although Japan seems such a technologically advanced country, in reality, until 2002 the proportion of households with computers was considerably higher in the United States than in Japan. In fact the number of computers in households in Japan remained lower than in most OECD countries throughout the 1990s. Similarly Internet use in Japan lagged behind the US and only reached similar rates at the beginning of the 21st century (OECD 2001). It seems this slow uptake has had a knock-on effect up to our current students. While in 2003 in schools in Japan, the average student to computer ratio was 5.3 students to a computer for 15 year olds, the usage rate, which is how many students used a computer a few times each week, was only 26%. In comparison the US had a student to computer ratio of 3.3 students to a computer, the lowest in any OECD country, and a usage rate of 43%, one of the highest in the OECD (Human Resources and Skills Development n.d.).

Differences in the skills required to use computers and the costs of acquiring them may have contributed to these patterns. According to the Economic Planning Agency (EPA 2000) of Japan, computer and internet penetration rates in Japan were initially lower than in the United States in part because of higher costs of hardware, software and telecommunication fees.

That computers and the Internet predominantly rely on the English language also played a role in Japan's slower adoption of ICT. Over 90% of online content is English (OECD 2001) but most Japanese still do not have sufficient English skills to participate in this global exchange. That English is still a distant foreign language in Japan is a significant handicap in the adoption of computers and the Internet. The same is true for the supply side of ICT. Developers must make additional investments in hardware and software in order to make their products compatible with the non-Roman-alphabet languages in Asia. This is believed to be one of the key reasons why Internet applications and e-commerce in Asia continue to lag behind the West. In addition, although the typewriter was a common feature in offices, schools and homes in the pre-computer era in the West, no comparable counterpart to the typewriter existed in Japan, and therefore most people in Japan do not know how to type. Also, because Japanese is still the dominant language used on computers in Japan, all users must go through the extra stage of transforming the English alphabet into Japanese characters. Thus the introduction of computers was, and continues to be, a major adjustment for users in Japan (Ono & Zavodny 2005).

Conversely, the opposite has happened with Japanese cell phones but with the same results, that of cutting Japan off from the rest of the world's international communications technology. Japan's cell phones set the pace in almost every industry innovation: e-mail capabilities in 1999, camera phones in 2000, third-generation networks in 2001, full music downloads in 2002, electronic payments in 2004 and digital TV in 2005. Indeed, Japanese makers thought they had positioned themselves to dominate the age of digital data. Unfortunately Japanese cell phone makers were a little too clever. The industry turned increasingly inward. In the 1990s, they set a standard for the second-generation network that was rejected everywhere else. Carriers created fenced-in Web services, like i-Mode. Those mobile Web universes fostered huge e-commerce and content markets within Japan, but they also increased the country's isolation from the global market.

Then Japan quickly adopted a third-generation standard in 2001. The rest of the world dallied, essentially making Japanese phones too advanced for most markets.

At the same time, the rapid growth of Japan's cell phone market in the late 1990s and early 2000s gave Japanese companies little incentive to market overseas. From 2007 however the market started shrinking significantly, hit by a recession and a graying economy; makers shipped 19 percent fewer handsets in 2008 and even fewer in 2009. Despite their advanced hardware, handsets in Japan often have primitive, clunky interfaces, consultants say. Most handsets have no way to easily synchronize data with PCs as the new smart phones do (New York Times, 2009). This adds to the lack of familiarity with computers.

However general computing skills and Internet literacy to navigate the Web, are essential for life and to interact with the global community. In an increasingly digital world young Japanese who wish to succeed, can not ignore the outside digital world and will need to cultivate these skills in English, as the English language still dominates information on the web.

Teaching within The Reality

While there are many proactive and innovative universities, courses and teachers in Japan, implementing wonderful ubiquitous technology and e-learning programs, this is not always the case. These days most language instructors are aware of the educational benefits that ICT can bring to students but often face difficulties from both the administration and students when they wish to use technology in a class.

There is a significant amount of research on the advantages using various forms of

digital media, for ESL/EFL teaching, both in and out of the classroom (Yamauchi 2009; Wang 2005; El-Bishouty et al. 2007). With the advent of Web 2.0, the way that technology can be used to motivate and assist students, appears to be limited only by the imagination. There are podcasts, vodcasts, wikis, blogs, chat, MALL (mobile assisted language learning), moodle, poodle (a cell phone based moodle), SMS vocabulary and other more specialized systems (see Zhang 2008). Many students are benefiting and having their language skills boosted in interesting and innovative ways thanks to the use of ICT and ubiquitous technologies. Many other students could also take advantage of these technologies but their institutions are either unaware of the possibilities or unwilling to spend money to enter the 21st century. Unfortunately, if the students and administration do not see the value, then no investment will be made in either hardware or software, and technologies that should be available to students to assist them in their learning and in reaching their full potential as citizens of the digital age, will not be available.

However, teachers in general want to do the best they possibly can for their students, under whatever circumstances they find themselves teaching. Although it is a far cry from what is happening at some of the larger and more progressive universities I feel that it is also possible to have a positive impact on students language learning and technology use by making them aware of some of the Web 2.0 possibilities that are out there and giving them the chance to interact with these in the target language, in this case English. This is one example of what can be done.

RESEARCH QUESTION

I wanted to know if a once a week class I was conducting at a university was having any impact on my students in regard to their interaction with technology and/ or their perceived gains in the L2, in this case English. As this was not a technologically advanced campus and many students had limited experience and interest in computers I looked specifically at using computers in the classroom and Web 2.0 activities.

METHOD

The students I worked with were all second year English majors at a small private women's university. In general both the language level and motivation level of the class was quite low, although there were several students who were both keen and had a slightly higher English level. It was an optional second semester class. Most students had done an introduction to computers class in first semester where they learnt basic typing and word-processing skills, computer and internet vocabulary, how to navigate the course management package the university uses (in this case WebCT),

using various websites for language learning and web searches, using an on-line chat component and making a simple wiki-page.

The second semester class was seen as an extension of this with the aim of introducing students to more Web 2.0 technologies and hopefully making them competent and confident users of computers and the Internet in both Japanese and English.

It was decided that there would be a class blog and a wiki-site for the class. Although students were allocated weeks when they had to contribute to the blog, with writing and an image, they were encouraged to write on it at anytime and especially to comment on what others had written. While some students did comment on the blog several times most only did their required contributions.

The wiki was set up as a way for students to share their work with the rest of the class. During the semester students were required to make three pages. The first was discussing their favourite movie, one was to display a PowerPoint presentation they made and the third was a simple webquest each student made. Although they were encouraged to collaborate with a partner on these tasks all chose to work independently, although sometimes friends chose the same topic. Also, although it was explained to them that they had the ability to change other students' pages if they wished, none did. I think as each page was considered to be owned by a student rather than as a class project it was seen as inappropriate. To ensure that students looked at the pages of other students they were required to complete and submit tasks in which they commented about other pages.

While most students had done the first semester introduction to the Internet and/ or were fairly familiar with ICT, not all were. Those who came into the course without much computer knowledge struggled at the beginning and were quite slow to complete the tasks. Also the less motivated and students with a lower English level were heard to complain about the workload on occasions, although all lessons were planned so that an average student, working reasonable conscientiously, could complete the task within the 90 minute class time. Despite the occasional grumble though, and surprisingly for an optional course, no student dropped out during the semester.

At the end of the course students were asked to fill in a questionnaire about the course. (Appendix1). The questionnaire was divided into three sections. Section 1 looked at their impression of the course overall and if they felt it had improved their English skills, their computer skills or their Internet skills. Section 2 was about what aspects of the course they felt had been useful and Section 3 asked what parts they had found interesting. There was also a comments section at the end where they were

asked if they would recommend this course to a friend and why or why not. For each statement in the first 3 sections the students were asked to give it a rating from 1 - not at all, to 5 - yes, a lot.

RESULTS

In general the response was very positive. Out of 14 students, 16 rated the course as a 3 or above for enjoyment and 12 out of 16 students gave a 4 or above for usefulness. 15 out of the 16 also gave a 3 or above for using computers more in the future. In Section 2, looking at how the students perceived the usefulness of tasks, making a PowerPoint presentation was rated the highest. The least useful activity was seen as writing on the blog although reading what others wrote on the blog was rated quite highly. In Section 3, asking about interest, once again making the powerpoint was the highest rating along with reading what other students had written on the wiki pages and looking at other student's PowerPoint's. (See Appendix 1 for more detailed results.)

Results of Internet Research Questionnaire

	1-not at all	2-a little bit	3-it was OK	4-it was good	5-yes, a lot
Part 1- a	0	2	5	8	1
b	0	1	3	10	2
c	0	3	7	4	2
d	1	2	2	7	4
e	0	1	3	9	3
f	0	1	7	5	3
g	1	1	4	5	5
Part 2- a	0	1	8	6	1
b	0	1	4	8	3
c	0	1	9	4	2
d	0	2	5	7	2
e	0	0	5	7	4
f	0	0	4	7	5
g	0	1	7	6	2
h	0	2	6	7	1
Part 3- a	0	2	6	5	3
b	0	1	5	5	5
c	0	2	6	4	4
d	0	2	7	3	4
e	0	0	5	6	5
f	0	1	5	4	6
g	0	3	7	3	3
h	0	2	5	5	4

In the comments, all students said they would recommend the course to their friends. Most said it was useful, fun to look at other student's pages and it improved their English.

"Yes I would. Because I could know much information around the world and my reading skill improved. Making own page was difficult and hard but I enjoyed looking other students page."

"Yes. Because this class is interesting and we can get computer skills as using computer. And we can know other students likes or some interesting writing or thinking."

DISCUSSION

Looking at the results of the questionnaire, the comments, and the fact that no student dropped out of the class or failed it through lack of effort, I consider the class a success. For most students it was the first time for them to make their own wiki page, write on a blog, surf the web in English and make a PowerPoint presentation. Although the OS on the computers they used were in Japanese I conducted the class entirely in English and used the English terms rather than the Japanese ones they saw on their computers, although at first I often pointed out where a command was.

Apart from the fact that most students found the activities in the course enjoyable and useful it was also interesting to note how highly they rated looking at what other students had produced. If I ever conduct a similar class I will ensure that this component in included again. That students value reading what others have written and feel it is of more useful than writing themselves, has also featured in other studies of computer use in ESL/EFL courses. (Nagatomo, 2006).

Compared to some of the uses of technology in language learning (see Zhang 2008 for details of: MALL - mobile assisted language learning, CLUE - Collaborative Learning Support System with a Ubiquitous Environment, and PERKAM - PERsonalized Knowledge Awareness Map), the class I conducted might seem very primitive, however given the lack of computer literacy of my students and the lack of technology available for use I felt the class was a good match for the students and more importantly gave them confidence in interest in pursuing various ICT learning strategies further. While much of the literature on technology in language teaching and learning claims it promotes learner autonomy, several studies have recently been conducted that show that far from the technology automatically causing autonomy, just as in other learning situations, the teacher needs to support the learners' progress toward autonomy. In an educational setting teachers need to scaffold instruction, using technology and take learners up one level at a time. (Murray 2005) In this instance my learners were

very much on the first level and needed basic literacy skills as well as an introduction to the technology.

Both reading and using the new technologies, whether in one's first or other languages, is now often referred to as digital literacy. This suggests more than just computer literacy, which is often narrowly seen as how to use software or specific hardware, to encompass communicating online and how to access, evaluate and use information presented in an electronic medium. For language learners, such reading and using includes learning digital literacy in another language, learning how to navigate the new technologies and also learning how to read digital texts such as web pages.

Little research has been conducted on how language learners navigate the web in their target language. However research with native speakers concludes that screen reading is more difficult than print reading and that in addition to reading the Web, learners also need to learn how to construct knowledge from a nonlinear, hypertext navigation. Second language learners, even if quite fluent readers of print text have difficulties reading texts specific to the web, such as home pages, have difficulty in determining which online texts have reliable information, lack skills for evaluating non-text features such as visuals and advertisements and have difficulty modifying rather than copying online texts. However, the skills of literacy to navigate the Web are essential for life, whether personal, social or educational, in an increasingly digital world. For many learners, these skills will need to be in an L2, especially English because it still dominates information on the Web. (Murray 2005)
While I don't pretend that my students became proficient in all these areas I do hope that I have taken them off the first rung of the ladder leading to digital literacy, which in the 21st century is an essential factor in life, not just language learning.

CONCLUSION

As we look back at 2010, "the year in which realizing the ubiquitous society in which anyone can easily access and use a network anytime from anywhere and from any appliance" (MIC), was to be achieved, I have to think that u-Japan has not reached these goals. While there are amazing things happening in many institutions, this has not filtered down to the students who could probably use it most.

While I hope I have demonstrated what can be done to assist lower level students get to grips with some of the technologies out there, given more resources there is much more that could be done. Out of four universities I currently teach at, none have a wi-fi system across the whole campus. If I want to have the class use computers I need to book them well in advance and access is often limited to one or two classes

a semester and where computers are more freely available they are out of date (more than 8 years in some cases) and not maintained. There is certainly nothing "ubiquitous" about the use of technology in these instances.

So while the u-Japan policy was an admirable attempt at improving Japan's standing in the technology race of the 21st century, from where I am I can't say that it was a great success. In fact I would guess that the majority of students received no benefits from it at all. If Japan hopes to maintain its position as a leader in the academic and economic world there needs to be more ICT initiatives targeted at all students and institutions, not just the elite.

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Appendix 1

Internet Research Questionnaire

Please write one number next to each sentence.
1－not at all, 2－a little bit, 3－it was OK, 4－it was good, 5－yes, a lot.

Part 1 Overall……
a) I enjoyed Internet Research －
b) Internet Research was useful －
c) Internet Research improved my English －
d) Internet Research improved my internet skills －
e) I feel I have better computer skills －
f) I feel I have better computer skills in English －
g) I think I will use a computer more in the future －

Part 2 A USEFUL part of Internet Research was
a) Making my own wiki pages －
b) Reading other students wiki pages －
c) Writing on the blog －
d) Reading what other students wrote on the blog －
e) Making a PowerPoint presentation －
f) Looking at other students PowerPoint's －
g) Making a web search －
h) Doing other students web searches －

Part 3 An INTERESTING part of Internet Research was
a) Making my own wiki pages －
b) Reading other students wiki pages －
c) Writing on the blog －
d) Reading what other students wrote on the blog －

e) Making a PowerPoint presentation －
f) Looking at other students PowerPoint's －
g) Making a web search －
h) Doing other students web searches －

Part 4

Would you recommend this course to a friend? Why or why not