



21st Century Language Learning and Teaching: Implementation of ICT-Oriented Language Education

Monthon Kanokpermpoon

Language Institute, Thammasat University

ABSTRACT

This paper aims to investigate and implement various uses of technologies in language education in the 21st century. Research explored in this paper show that there are a wide variety of technology to choose from, either offline or online media. Teachers and students who are digital immigrants can benefit from integrating technology in their learning and teaching. If only these teachers and students understood the importance of and practiced Network-based language teaching and e-learning skills.

Keywords: 21st Century, ICT, language learning, language education

INTRODUCTION

At the turn of the 21st century, there are many changes in the role of education in the world, especially an addition of digital literacies in education (Solomon, 2010). Some people were born with technologies surrounding them and become native users of technology language, or as Prensky (2001a) coins this idea with the term, 'digital natives'. Some people, such as those born in the 19th or 20th century, however, become 'digital immigrants' who need to adapt themselves to the emergence of technology (Prensky, 2001a).

Comparing new generations with older generations, we might face a big gap in understanding each other, especially in terms of education and learning. To be more specific, English education, among various disciplines, might seem to be learnable and



teachable from different perspectives (John & Sutherland, 2004) As for ‘digital immigrants’, using printed materials seems to be safer and more comfortable to use than learning and reading from e-books, for example. On the other hands, ‘digital natives’ might learn a foreign language faster and better when they play online games or interact with their online friends (See more examples in Prensky, 2001a, 2001b ; John & Sutherland, 2004)

In this article, we will explore different views of language learning from different perspectives and take a closer look at how new technologies can be embedded in and enhance language education from existing research studies. Implication for language teachers and students will also be discussed.

21ST CENTURY LEARNING

It is generally accepted that the world is changing, be it physically, socially and economically. The way education was settled and provided in the past seems to mismatch the reality (Kay, 2010). In other words, what we are teaching and training students in schools seem not to be practical and applicable in the real labour world. Trilling & Fadel (2009) explain that routine work in the 20th century was originally performed by people, but it was gradually substituted by machines. However, with the expansion of computers and telecommunications, people need to change their skills to adapt to more complicated, creative tasks (Dede, 2009).

With reference to the Population Reference Bureau (2012), there are approximately two million people, or 27%, who are under 15 years old and have been surrounded by technology since they were born. However, the majority of people and students are considered ‘digital immigrants’ and they need to re-learn and make use of technology so as to blend in the future society (Buraphadeja, 2012).

In the next section, we intend to take a careful look at how technology can be blended in the teaching and learning of languages, among other diverse areas of subjects.



EMBEDDING TECHNOLOGY IN LANGUAGE LEARNING AND TEACHING

As information and communications technology (ICT) becomes part of everyday practices in the 21st century, it is important to note that (digital) immigrant educators implement and try to include technology in routine teaching and learning (Dede, 2012).

At a broad level, especially in Asia and the Pacific, UNESCO (2003) conducted a series of ICT trainings for teachers. The aims were to develop teachers' ICT skills for every aspect of teaching and learning core subjects and to develop individual computer literacies for practical purposes. The study was concluded with a successful story of general understanding in terms of computer implementation in education and policy. However, some specific issues such as troubleshooting and technical maintenance, extending training facilities and programmes, and continuing support were still of a great concern in a continuing success of training.

In 2004, UNESCO further synthesised lessons learned from integrating ICT in education in six countries, namely Indonesia, Malaysia, Philippines, Singapore, South Korea and Thailand. The case studies were to look into eight categories: (1) broader environmental context; (2) policy and regulatory environment; (3) management and financing; (4) ICT in schools – policy, vision and strategy; (5) technology infrastructure and connectivity; (6) curriculum, pedagogy and content development; (7) professional development; and (8) monitoring and evaluation. The results of analysis and synthesis were that these countries were grouped into '[1] advanced countries with integrated ICT in the education system, [2] countries where national ICT policies and master plans have been formulated and various ICT integration strategies are being applied and tested, and [3] countries where efforts towards ICT integration efforts and formulation of national policies have just begun.' (for further analysis of policies in ICT integration, please see UNESCO, 2004).

Shifting from regional region to local level, a group of researchers (Sutherland, Armstrong, Barnes, Brawn, Breeze, Gall, Matthewman, Olivero, Taylor, Triggs, Wishart & John, 2004) conducted a research study on the effect of embedding ICT into everyday



classroom practices in the UK. They designed and redesigned a curriculum with an inclusion of ICT on core subject areas in English, mathematics, modern foreign languages, history, music and science. The theory that they based their attention on was sociocultural theory¹. The sample teachers under this research were informed of the theory and trained to embed ICT tools in their subject teaching. What was found in this research is that ‘project teachers embraced learning for themselves and used ICT tools to transform their own knowledge of subject areas and develop, expand and adjust their teaching repertoire.’ (p.420). The researchers concluded that teachers and policy makers discuss potentials of including ICT in teaching and learning core subjects and treat technology as a part of blended learning and teaching. This is for the possibility of digital literacies transferred to outside classrooms.

In terms of embedding ICT training for language teachers, Maneekao (2001) conducted an internet training session for Thai EFL teachers. Her training was arranged into changing attitudes, theory explanation, getting to know the Internet and hands-on experience. What was found in her training and study is that Thai EFL teachers realised the importance of the workshop and reported that, even though the content were familiar, it was still relevant and practical to refresh their experience. What is needed to be improved concerns time limitation and more practical experience.

Another case of study which trained language teachers to be equipped with ICT competences can be found in Titova (2012). In 2012, Titova designed an online professional development course in ICT for EFL school and college teachers from Russia, Belorussia and Ukraine. The aim of her training was to train language teachers how to create their own social networking system and virtual teaching environment. What she found is that teacher trainees were satisfied with course contents and feedbacks received from their assignments. However, the researcher reported that her subjects were less satisfied with time allocation for online assignments, lack of ICT competence level, no online discussion skills and many more. What is needed for further research, as the researcher suggested, is collaborative interactions in the course.



Even though there are some lacks of certain issues in embedding ICT training in language teaching and learning as reported in the above scenarios, Sharma & Barrett (2007) and Lewis (2009) propose how to blend technology into a language classroom. The following table summarises types of technology which can be blended in language education.

Table 1 Technology for blended language learning

(adapted from Sharma & Barrett, 2007 ; Lewis, 2009)

<i>Types of technology</i>	<i>Blended skills of language learning</i>
Offline tools	
<ul style="list-style-type: none"> ● Electronic dictionaries 	<ul style="list-style-type: none"> ● Searching skills ● Pronunciation practice
<ul style="list-style-type: none"> ● Word processing tools (Word processors and PowerPoint) 	<ul style="list-style-type: none"> ● Writing and editing skills ● Research skills ● File management ● Reading comprehension ● Presentation skills
<ul style="list-style-type: none"> ● Interactive whiteboards 	<ul style="list-style-type: none"> ● Dynamic presentation skills
Online tools	
<ul style="list-style-type: none"> ● Computer-mediated communication (e.g. email, chats and text messaging) 	<ul style="list-style-type: none"> ● Interpersonal communication skills ● Presenting information ● Critical and analytical thinking skills ● Writing and editing skills
<ul style="list-style-type: none"> ● The world wide web (e.g. web browsers, search engines, RSS feeds, webquests) 	<ul style="list-style-type: none"> ● Authentic learning experience ● Research skills ● Organising skills ● Critical and analytical thinking skills ● Summarising skills ● Evaluating skills



<ul style="list-style-type: none"> ● Web 2.0 technology (e.g. blogs, wikis, podcasts, digital portfolios, social networking) 	<ul style="list-style-type: none"> ● Authentic learning experience ● Interpersonal communication skills ● Research skills ● Organising skills ● Critical and analytical thinking skills ● Summarising skills ● Evaluating skills
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As can be seen from Table 1, it can be generalised that teachers can choose between online and offline technologies to blend in their language teaching. If they would like to use technology for training basic language skills, including reading comprehension, writing and editing skills, pronunciation, and presentation skills, offline mode is possible. However, for more advanced language skills such as critical and analytical thinking skills, evaluating skills, etc., teachers might need to adapt online media in their language education.

In the following section, hands-on experiences and studies on each type of technologies will be discussed.

IMPLEMENTATION OF TECHNOLOGY USED IN LANGUAGE EDUCATION: WHAT RESEARCH SHOWS?

In this section, each type of technology presented in the aforementioned section will be discussed.

ELECTRONIC DICTIONARIES

Sharma & Barrett (2007) assert that there are many types of electronic dictionaries. They can be available on CD-ROMs, online and concordances (Kobayashi, 2006). Regarding the availability of different forms of electronic dictionaries, it is important to explore how students and teachers react to the use of electronic dictionaries which can be explained in the following studies.



In 2000, Weschler and Pitts compared Japanese students' use of paper and electronic dictionaries. The dictionaries used in this study were Japanese-English and English-Japanese paper dictionaries as well as Seiko TR-7700 electronic dictionaries. Students were divided into two groups: one given paper bilingual dictionaries and the other given electronic dictionaries. The result of the study revealed that Japanese EFL students could use electronic dictionary 23% faster than paper dictionary. However, the researchers discovered that their subject of study rarely used electronic dictionaries. This is because, comparing faster speed of finding unknown words, high price of owning an electronic dictionary was a main factor diminishing students' motivation to afford one. Also, even though an electronic dictionary was presented to these students, students simply used it for translating English to Japanese, not even listening to pronunciation from the electronic dictionary.

Another study conducted by Kobayashi (2006) revealed that 72% of Japanese learners of English owned pocket electronic dictionaries (PEDs). The researcher reported that those who owned PEDs tend to use them more often than their paper dictionaries. Dictionary consultations were found to increase more frequently, enabling long-term language learning and greater vocabulary repertoire.

In his study of pocket electronic dictionaries (PEDs), Boonmoh (2009) investigated Thai EFL teachers' and learners' uses of PEDs. What he found from the teachers' perspective is that Thai EFL teachers preferred to use and have their students use a monolingual dictionary. However, they were not well-informed of what contents and capacities of Thai PEDs were. Regarding students' perspectives, the researcher found that the majority of Thai EFL students owned paper dictionaries more than half of those who owned PEDs. When it comes to use, however, very few students used paper dictionaries comparing to those who owned PEDs. The results of his experiment were that students reported less teachers' influence on the use of PEDs and their limited knowledge in using PEDs.

As can be seen from the above examples, it can be stated that electronic dictionaries are playing a significant role in language learning, especially for Asian



students. However, Sharma & Barrett (2007) emphasise their concern on an overuse of electronic dictionaries since this might lead EFL students to over-reliant on translation and lack or ignore word-guessing strategies in language learning.

The next session will discuss how other offline media is used in the present world.

WORD PROCESSING TOOLS

Word processors are commonly used in this 21st century. Generally, basic functions of word processing are inserting and deleting, cutting and pasting, highlighting, underlining and circling (Lewis, 2009).

Word processors can be used to teach and practice writing skills such as letters, reports, memos, essays and assignments, academic papers, articles, instruction manuals, text for websites, creative writing, etc. (Sharma & Barrett, 2007). Besides basic writing practices, Torres (2000) asserts that there many uses of word processors in teaching and learning vocabulary. She proposes that EFL teachers can use word processors to generate activities for vocabulary revision, synonyms, vocabulary building, and phrasal verbs and definitions.

In 2001, Li and Cumming conducted a longitudinal case study on how word processing was used to improve the quality of essay writing by a Mandarin EFL student. The result of their research revealed that the subject employed electronic word processing more than pen-and-paper medium. The researchers also found that there was a greater revision frequency made at discourse and syntactic levels with higher scores for content on analytic ratings of the completed compositions. When it comes to evaluation, the subject was found to produce extensive evaluation of written texts in think-aloud verbal reports.

Another study by Biesenbach-Lucas, Meloni & Weasenforth (2000) compared how Arab EFL students wrote using two different types of media, namely word processor and e-mail. What was found in their research is that students employed different cohesive devices and text length in their writing from both media. However,



even though the length of writing on both media was short, Arab students were found to use more cohesive features than Asian students.

As presented in the above scenarios, it can be implied that word processing becomes part of our daily practice and it is less taught in language teaching. However, if we try to follow the research studies conducted by Biesenbach-Lucas, Meloni & Weasenforth (2000) and Li & Cumming (2001) discussed above, we might be able to use word processors to teach our students areas of written discourse and process writing.

Since word processing seems to be a document programme that people might take it for granted and assume our young generation knows how to use it, it is important to reinforce the teaching through word processing, possibly with an integration of interactive whiteboards (Sharma & Barrette, 2007) to be discussed in the following section.

INTERACTIVE WHITEBOARDS

Lewis (2009) defines an interactive whiteboard (IWB) as

“... a touch-sensitive board that is connected to a computer and a projector

(and other peripherals such as DVD players if necessary) and displays on a computer desktop.” (p.33)

As interactive whiteboards are becoming exciting tools that are widely used in language classrooms around the world, there are several researchers (such as Cuthell, 2003 ; Xu & Moloney, 2011 ; Schmid & Whyte, 2012) reporting different uses and perspectives of students and teachers towards interactive whiteboard use in language classrooms.

In 2003, Cuthell conducted a research study on teacher’s reflections on interactive whiteboard uses in education. His subjects of study were primary and secondary school teachers in the UK. The result of his research revealed that the majority of primary schools (54%) had 11-15 boards installed, while 47% of secondary schools possessed 20 or more boards installed. Sample teachers were highly motivated and empowered, especially primary school teachers, when they had an



interactive whiteboard in their own room. The researcher also discovered that teachers felt interactive whiteboards helped them prepare better lessons, supporting a variety of learning styles and intelligences among their students.

In 2011, Xu and Moloney conducted a case study of Chinese language learning in Sydney. What was found in their research is that students supported the use of new technology in education which helped them acquire various features of the Chinese language. Teachers in this study also confirmed that using interactive whiteboards could enhance their success in delivering effective teaching and learning of Chinese. This study is similar to a case study conducted by Schmid (2010) who found that an EFL teacher at a German secondary school developed several competences in utilising an interactive whiteboard in her language classroom. The subject of her case study was found to find tune with the use of an interactive whiteboard in terms of (1) the ability to design IWB-based materials in line with social interactions between whiteboard and learning context, (2) appropriate management of interaction around IWB, and (3) her ability to find the ‘right balance’ of using technology.

Even though there are some studies revealing positive attitudes towards uses of IWBs in language classrooms, Schmid and Whyte (2012) reported that EFL teachers in French and German state schools employed different approaches in implementing the use of IWBs. Teachers in their study used different methods, ranging from grammar-translation to communicative tasks. This, as suggested by the researchers, was shaped by teachers’ teaching and learning experience, pedagogical beliefs and institutional demands. The researchers summarised their findings that teachers often adapted or ignored different pedagogies to construct their own and institutional goals in embedding technology into classrooms.

As reported in the above case studies, it can be concluded that interactive whiteboards are very new to language teachers and students. Some teachers and students may react differently to the use of IWBs in a language classroom. It is the job of policy maker to implement whether this type of new technology is suitable for prospective educational settings.

In the next section, different types of online technologies will be explored.



COMPUTER-MEDIATED COMMUNICATION

Computer-mediated communication is defined by Sharma & Barrett (2007) as follows:

“Computer-mediated communication, or CMC, refers to situations as diverse as communicating through the keyboard with penpals overseas, sending an email across the world, or making a telephone call across the Internet, using a system such as SkypeTM.” (p. 98)

With the emergence of face-two-face communications via technology, we can claim that this type of technology, or CMC, was the first generation of online communication. Sharma & Barrett (2007) explained that computer-mediated communication can be divided into two categories, constituting *synchronous* and *asynchronous* communication.

1. *Synchronous communication* is real-time communication such as instant messaging (IM), computer conferencing, multiuser dimensions, chat, etc.
2. *Asynchronous communication* is communication which takes place at different time, such as email, texting, blogs, etc.

Baron (2008) categorises different types of online communication based on the two criteria above and adds his views towards the number of interacting people as follows:

Table 2 Different dimensions of CMC

(adapted from Baron, 2008, p.14)

	<i>Asynchronous</i>	<i>Synchronous</i>
<i>one-to-one</i>	email, texting on mobile phones	instant messaging
<i>one-to-many</i>	newsgroup, listservs, blogs, MySpace, Facebook, Youtube, Twitter	computer conferencing, MUDs, MOOs, chat, Second Life

In the following section, samples of different types of CMC will be discussed based on implications on language learning and teaching.



Emails

Email first appeared in the world in 1971 (Baron, 2008). It has been used alongside with telephones for more than almost two centuries. Here are samples of how emails can be used in language teaching and learning.

In 1993, Barson, Frommer & Schwartz reported their experimental studies in communication and collaboration of French classes in four different universities in the USA. Subject students were assigned tasks to email their friends from different universities during 1988-1993. The result of this particular study found that task-based model was an effective way of using emails. It was also discovered that students used discourse features more frequently since they were highly motivated to use technology integrated in their language classes.

Another similar study was conducted by Ruhe in 2008. What she did is to have students exchange their email messages with their friends from two pairs of American universities. The researcher concluded in her study that email exchanges could enhance intercultural awareness, improve a more positive affective climate by providing greater privacy and intimacy, and serve the needs of young students towards EAP curriculum in the 21st century.

Even though email exchanges are reflected as an ideal way of teaching and learning languages, Keyuravong and Maneekhao (2006) investigated the use of emails in large class consultation. The result of their study found that among 120 Thai EFL students only an average of 1.65 messages was posted which seems to be too low for language learning benefits. The researchers concluded that this low number of posts were due to practical problems such as time limitation, unfamiliarity use of technology and technical problems.

In 2011, Motallebzadeh conducted a study by integrating emailing tasks into EFL reading comprehension classes in Iran. He compared students' performance between two groups: one with email tasks and the other with printed exercises. What the research found was that there was a significant difference between interchange/passages objective placement test C and posttest in emailing groups and



those in the control groups ($p \leq 0.05$). However, there was no significant difference between the two groups' performances in the posttest unseen section. The researcher concluded in his study that emailing tasks can contribute to the improvement in ability of EFL reading comprehension.

Since email become a standard means of communication, many teachers shift their attention to other means of communication to promote their language learning and teaching. In the next section, bulletin board, a type of email exchanges, will be discussed.

Bulletin boards

Sharma & Barrett (2007) explained that a bulletin board is 'an electronic version of a noticeboard.' A writer can post a message available for any members to read and respond.

As the name suggests, bulletin boards are noticeboards that require those who use them to discuss and share their ideas. Here are some examples of how language teachers use discussion boards in their language classrooms.

In 2011, Yilmaz & Saglam investigated the effects of using online discussion on Turkish EFL students' achievement in online courses. The result of study revealed that students who used discussion boards produced higher scores than those who did not use the platforms. The researchers also found that students who participated in discussion board activities tended to write better using morphosyntactic operation and access more additional resources for their response writing.

In term of language improvement found in Yilmaz & Saglam (2011) discussed above, it is also found that Thai EFL students tended to use more modality in their writing on the bulletin board (Tangpijaikul, 2008) Subjects in the study of Tangpijaikul (2008) were to write three responses on the bulletin board and three academic essays. What was found in his study is that Thai EFL students used more modal markers in online bulletin board writing than in academic writing.

As reported in the above cases, bulletin boards are useful tools for developing students' discussion and writing skills. However, it is important to note here that



listening and speaking skills can also be enhanced by the use of bulletin boards (Sharma & Barrett, 2007).

In the next section, an instant voice discussion, or video conferencing, such as Skype will be discussed.

Video-conferencing

Video-conferencing is widely used in the business world (Sharma & Barrett, 2007). It is an instant video and audio link which allows people to connect each other in real time. A generally used application for video-conferencing in the 21st century is widely known as Skype.

Skype is a type of video-conferencing which enables users to experiment new way of communication. Eaton (2010) suggests that teachers can use Skype to connect other teachers within and outside their professions, to empower language teachers, to give appropriate presentations and workshops, and to be a stepping stone to using more sophisticated technology in the classroom.

Based on the benefits of using Skype proposed by Eaton (2010) above, Tsukamoto, Nuspliger & Senzaki (2009) conducted a study providing Japanese students to explore the use of Skype in EFL discussion seminars. What they found in these web conferences is that students were highly motivated in using Skype and began to speak more English during conference calls. This study was not similar to a study conducted by Yang & Chang (2008), however. What was found in Yang & Chang's study is that Taiwanese college students did not appear to be highly effective for improving oral skills. This might be due to the fact that students' were at similar abilities and there was a lack of native or highly proficient Chinese interlocutors.

Even though all of the media discussed above are useful and effective in language education, it is important to note that the emergence of user's interface on the web since the late eighties and early nineties leads to significant changes in language learning and teaching (Sharma & Barrett, 2007). In the next section, we will explore more about new user's interface on the web and its latest development.



World Wide Web

The World Wide Web exists in the world since the late eighties (Sharma & Barrett, 2007) Lewis (2009) explains that the World Wide Web is widely used as a basis for sharing information. However, in terms of education, Sharma and Barrett (2007) propose many uses of the web for language learning because each website constitutes either one or all of the following media:

- Search engines
- Multimedia of images, audios and videos
- Push technologies such as email newsletters, RSS (Really Simply Syndicate), blogs and podcasts

In addition to various types of media to support (language) learning presented above, Murray and McPherson (2004) assert how to use the World Wide Web to support language learning which can be categorized into the following groups:

- Finding and selecting information on websites
- Using appropriate websites for language learning
- Practicing listening using videos or audios posted online
- Increasing reading skills on the web
- Learning language features through in taking content subjects on the web
- Using WebQuest as a platform for designing language projects
- Interacting through the use of learning management system
- Designing websites using appropriate language forms

Besides several techniques of how to use websites to promote language learning presented above, Osuna and Meskill (1998) conducted a study using websites to expand language and culture of Basic Spanish among American college students. What they found in their study is that websites were appropriate teaching tools for Spanish language and culture. Also, they discovered that using websites for language and culture learning could increase higher motivation in the subject students.



In line with the study of Osuna and Meskill (1998) discussed above, what was found in a study conducted by Piper, Watson & Wright (1996) regarding website evaluation at the University of Southampton is that both teachers and students were highly satisfied with ‘topicality of target languages’ available on websites. However, they found that the majority of students regarded websites simply as an online library. These sample students also lacked skills in research, language, and learning strategies in fully utilizing websites for their learning.

In 2008, however, there was another study undergone by Son in evaluating ESL websites for promoting language learning. The researcher found that when ESL teachers and students engaged in creating website and using websites for task-based activities, his subject appreciated the use of websites in learning English. The sample subjects also showed that they would like to explore more on how to use websites to learn English within and outside classrooms.

As presented in the aforementioned studies, World Wide Web becomes a significant use in language education. However, thanks to the emergence of new technology on the World Wide Web, some changes in language education also exist. The following session will discuss this issue.

Web 2.0 technologies

Web 2.0 is the term used in describing a phenomenon where the web is transferred into more uses as many media and new technologies are emerging and embedded in the web. The term was originally coined by Tim O’Reilly in 2005 who describes Web 2.0 as an umbrella platform covering various types of media and technologies. The diagram below shows how Web 2.0 develops into its existence today.

Web 2.0 Meme Map

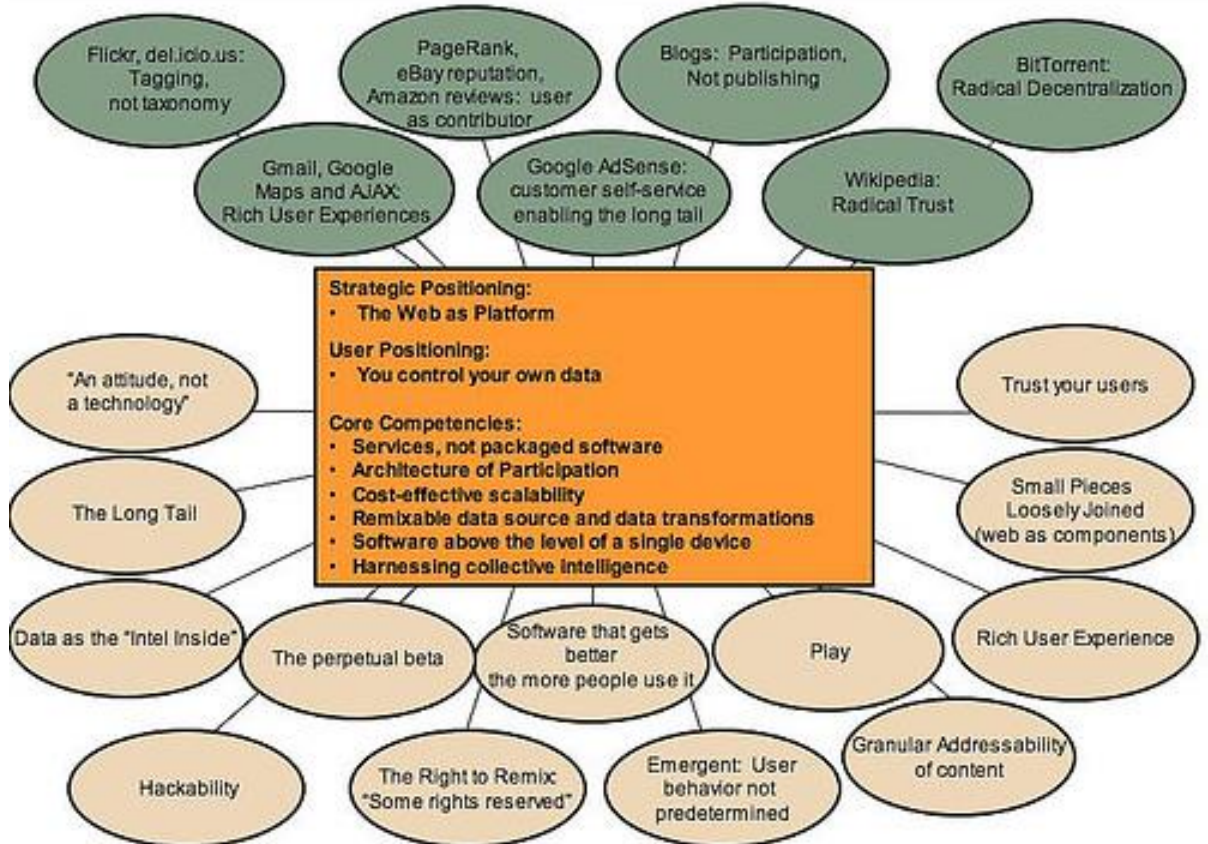


Figure 1 shows a 'meme map' of Web 2.0 technology

(Adapted from O'Reilly, 2005 at <http://www.oreillynet.com/lpt/a/6228>)

As can be seen from the above diagram, it is generally accepted that Web 2.0 plays a significant role in increasing human interactions. It also provides an owner (or user) with authority in creating and inputting their data or information to 'share' with the world (O'Reilly, 2005)

In terms of implications on the effects of using Web 2.0 technologies in language education, Lewis (2009) proposes that there are many benefits of Web 2.0 technologies to teachers and students as follows:

- There are many inventories of authentic material available in various types of media such as texts, photos, pictures, audio and video.



- They help and increase interactions among people from different parts of the world who share the same interests, creating a sense of community of practice.
- The platform provided on Web 2.0 allows students to create and authorize their own content faster and more professionally.

Given the above scenario of benefits of Web 2.0 in language education, Wang & Vasquez (2012) investigated how Web 2.0 technology was implemented in language learning and found that only blogs and wikis have been the most widely used and studied comparing to other social networking applications and virtual worlds. They also found that the most explored languages in using Web 2.0 tools were English, Spanish, German and French which are considered more commonly taught as second or foreign languages.

What was found in Wang & Vasquez's study implied that even though there are many uses of Web 2.0 tools in language education, only limited areas of studies have been examined. The researchers explained that most of the studies conducted to explore the use of Web 2.0 fell into investigations of the technology in 4-skill language learning, learner's identities, online collaboration and learning communities. There was no grounded and common theory in investigating the use of Web 2.0 technologies.

In the following section, two main types of Web 2.0 technology will be discussed and investigated.

Blogs and wikis

A blog is defined by Lewis (2009) as follows:

"... an electronic journal where readers post their thoughts and opinions on a regular basis. It is usually arranged in backwards Chronological order, and readers focus on the latest post and read down until they reach the place they left the last time they logged on." (p.63)



As can be seen from the above definition, using blog in language learning can promote core competencies of Web 2.0 technology in which students can be an author of his/her own contents. Boas (2011) suggests that blogs can be used to teach students' process writing in a collaborative way. This is supported by a study conducted by Blackstone, Spiri, & Naganuma (2007). The researchers underwent a study of blog learning among 145 students in Japan and found that, when teachers used blogs to have students help each other to write, peer-edit and publish articles, there was greater learner interaction and skills development. They also found that students are more interactive and show greater positive attitudes towards English learning via blogging.

Besides using blog as a learning tool found in the above case, Murry, Hourigan & Jeanneau (2007) also discovered that, when having 32 ESL students keep writing blogs regarding their own language learning and strategies, most students realised the possibility of using blogs to reflect their own language learning. When assigning students to write an academic essay after the 5-week blog writing period, the researchers found that teachers could “benefit from an academically-valid assessment framework”. What these researchers concluded is that even though students and teachers could benefit from using blogs in studying writing, there should be an improvement on pedagogical and processing writing.

Another study conducted by Rezaee and Oladi (2008) showed that when their 60 EFL Iranian students took part in a class community weblog, there was a verifying social interaction and increasing writing creativity from observation, questionnaire, interview and IELTS writing proficiency test.

Besides written blogs used in teaching and learning language, Sun (2009) conducted a research study to investigate the effect of using voice blog to promote students' speaking skills. What was found in her study is that 62 Taiwanese college students of English developed a series of blogging stages, constituting conceptualising, brainstorming, articulation, monitoring and evaluation. Her study subject also used



various strategies in dealing with blogging-related problems and regarded blogging as a way of learning, self-presentation, information sharing and social networking.

As can be seen from various examples above, it can be concluded that using blog in language learning and teaching can help promote learner autonomy, social interaction as well as language learning skills.

Another means of promoting language learning within a collaborative framework is to use *wiki*.

Wiki is generally understood to be a common webpage where people can help each other write or create their own contents (Lewis, 2009; Sharma & Barrett, 2007) The key element is to create collaboration among language learners (Augar, Raitman & Zhou, 2004) resulting in creating ‘community of practice’ (COP) for language learning and teaching (Godwin-Jones, 2003)

Konieczby (2007) suggests that wiki can be used to teach reading and writing classes. He describes that students can create and improve an article, invite new contributors, criticise their peer writing, reflect upon themselves, and share with the community. However, a study conducted by Zordo (2009) found that her three case students showed some collaborative behaviors in learning English among themselves. The researcher concluded that using wiki could contribute to language learning collaboration, but it was less successful in facilitating among students. Her subject study preferred to use more social network when it came to co-constructing products.

As wiki has been used for some time in language education, immigrant students may prefer a newer media to interact among each other (as reported in Zordo, 2009 above). In the next section, learning language through social networking will be discussed and explored.

Social network

Social network has played a significant role in social interaction in the present world. There are many types of internet-based social media that exist today such as, Facebook, Google, Twitter, YouTube, etc. (Stevenson & Liu, 2010)



Even though social network was originally designed for social interaction, it can be a good learning tool for language education (Stevenson & Liu, 2010)

A study conducted by Hatane and Wijana (2010) is in line with idea postulated in Stevenson & Liu (2010) in that using social network group discussion such as Facebook can enhance students' social communication skills. They found that, even though there were some drawbacks in finding appropriate topics to post and limited Internet connection, Indonesian EFL learners could still benefit from using Facebook discussion group in terms of critical thinking, grammar and writing skill practice, nonverbal communication and self-acknowledgement.

Kabilan, Ahmad, & Abidin (2010) conducted a study on how Facebook can be integrated in language learning. What was found in their study is that 300 undergraduate students at Universiti Sains Malaysia regarded Facebook as a possible online platform that can facilitate learning. However, the researchers suggested that it is the job of language educators and teachers to plan how to integrate Facebook as part of their language teaching, learning objectives and learning outcomes.

In 2012, Akbari, Simons, & Eghtesad investigated students' attitude towards the use of Facebook in learning English. The results from their questionnaires showed that there was a significant difference between students' attitude towards using Facebook before and after an online English course. They also found that, when students spent more time interacting on Facebook, their linguistic abilities increased by the end of the course.

The effective use of social network system in promoting language learning is also supported by Boonmoh (2012). What is found in Boonmoh's study is that 18 Thai EFL students were highly motivated to post messages, photos and videos on Facebook under task-based language learning activities. These sample students also revealed positive attitudes towards using Facebook as a tool for language learning, especially in terms of authentic social interaction and self-expression.

Besides using Facebook as a tool for promoting language learning, Acer & Kimura (2012) underwent an investigation on how Twitter is used by 70 Japanese



students. What they discovered is that these Japanese EFL learners tweeted (or posted) English messages mostly relating to greetings and daily reports. In addition to this, these students frequently responded to messages posted by other language learners.

Although there is much potential for the use of social media in language learning, there might be some difficulties in doing so. Fullmer (2011) reported that using Facebook is likely to pose a big challenge in promoting the mastery of standard English reading and writing among EFL Filipino students. He also proposed that high order thinking such as remembering, analysing and evaluating may or may not be mastered via the use of Facebook.

A study conducted by Acar, Nishimuta, Takamuea, Sakamoto, & Muraki (2012) revealed that the use of social media such as Facebook is sometimes not particularly popular among Japanese students. The researchers explained that some features of the media itself such as real name policy, complication of the interface and security issue are major reasons these Japanese students are not comfortable with. Another reason derived from this particular group of non-users is that of personal preference. These sample students prefer local social media to international ones.

IMPLICATION ON THE USE OF ICT IN LANGUAGE EDUCATION

As presented in the previous section, technology has developed more significantly today than in the past, and teachers and students react to diverse uses of technology differently.

In this section, implication of the use of ICT in language education will be discussed.

To cope with the emergence of information technology, Kern, Ware & Warschauer (2008) postulate that teachers and students in the 21st century use 'network-based language teaching' (NBLT) as a basis for language education. What these educators propose is that language educators take careful consideration in



pedagogical use of computers in connection to local or global networks. This results in a better one-to-one, one-to-many, or many-to-many communication.

In addition to the above suggestion, language educators should be concerned with the social and cultural construction of knowledge offered by technology; the important of collaboration in micro and macro levels, such as individuals and groups; and a learner- and problem-based approach to language teaching.

What language teachers should be prepared to face in the 21st century learning contexts, as asserted by Kern, Ware & Warschauer (2008), are the followings:

- *Non-classroom contexts*: As students in the 21st century tend to employ more technology in their language learning, it is the job of the teachers to adapt and embed technology in their pedagogy. In order to do so, the teachers should create a sense of community of practice. This means that teachers should develop common interests in their students prior to putting students into online learning.
- *Multimodality*: Teachers should understand their students as an individual with personalised characteristics. However, it is also teachers' responsibility to train their students to be flexible in reacting to different modes of online learning within the framework of personal preferences.

Besides the above suggestions, it is also the job of a learner to develop their own e-learning skills. Clarke (2008) recommends that students develop their own traditional skills to be a grounded basis for e-learning skills. This will help facilitate a success in language learning.

Traditional skills which should be learned as a basis for online learning, as Clarke (2008) suggest, fall into:

- Writing notes
- Reading process
- Writing process
- Self-assessment



- Research skills
- Learning in face-to-face groups
- Managing stress
- Reflection on personal learning and studying
- Listening skills

In addition to the traditional skills presented above, Clarke (2008) discusses that it is also important for language learners to increase their own computer skills. These skills include assessing personal skills, accessibility, file management, compressing files, tracking changes, saving and backing up information, applications, searching the world wide web, assessing the quality of online information, presenting information, transferring information, saving and backing up information, digital images, e-portfolios, podcasting, blogging, plagiarism, copyright, and utilities.

Following the suggestions proposed by Kern, Ware & Warschauer (2008) and Clarke (2008) above, teachers and students may be able to deal with their language learning and teaching in the 21st century technology.

CONCLUSION

The emergence of information technology plays a significant role in the change of how language learners learn today. Various studies show that teachers (or digital immigrants) can choose to use any of the media, either from offline or online technologies. Learners of the 21st century indicate that their performance in learning through any kinds of technology is possible. It is, therefore, the job of language teachers to embed technology in their language learning and teaching. Students should also be ready to imprint themselves with appropriate skills for the 21st century.



Note:

¹ According to Vygotsky (1978), sociocultural theory of learning concerns interplay between individual and social levels. A child needs to expose to the society in order for him/her to develop his/her own intelligence and understanding of the world.

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