

## Blended Learning in the CALL Lab

Stephen Shucart

### Introduction

Moore's Law (Moore, 1965) roughly states that computing power will double every 18 months. Thus the State-of-the-Art hardware installed at the Akita Prefectural University CALL lab in 1999 was sadly outdated by the spring of 2006. Luckily CALL methodology has not been advancing with such exponential growth. By utilizing cutting edge software and textbooks based on the most sophisticated techniques and theories in Applied Linguistics we have managed to keep the English language program functioning at an optimum level, though no longer at the bleeding edge of technological advancement. With the introduction of an extensive upgrade to the existing system hardware, bringing it in line with the most ultra-modern of the CALL labs currently available, we have been able to advance our Blended Learning environment with Web 2.0 social networking software and an open-source Course Management System (CMS) called MOODLE. Our blended-learning environment bridged the gap between the test-oriented high school focus and the goal of actual communication. The implementation of a VLE [Virtual Learning Environment] encourages learner autonomy and language acquisition.

### Background

Our technology university has no English language department, thus the CALL lab serves as the basis for the first year language requirement of all the students attending the university. As is the norm in 21<sup>st</sup> century Japan, these students tend to avoid face-to-face communication. Instead, they prefer communication through the media of computers or cellular phones.

The Japanese public school system starts mandatory English lessons in the 7<sup>th</sup> grade. Unfortunately the quality of this education is sorely lacking. Many of the teachers have little, if any, communicative ability and merely teach by rote from standardized textbooks. The motivational factor for these students is to pass the multiple-choice English exam that is a part of nearly all college entrance exams, thus there is little incentive to use the language communicatively. Rote memorization of discrete vocabulary and obscure grammatical points thus becomes common. The educational tactic most commonly employed is the Grammar-Translation Method. At best, a school might employ the Audio-Lingual method that is based on the theory of learning called Behaviorism.

Modern theories of language learning started in the late 1950s with Noam Chomsky's Transformational-Generative Grammar, and his concepts of competence and performance. He was

the first to define Linguistic Competence, "... which is confined to internalized rules of syntax and abstracts from the social rules of language use." (Stern, 1983, p.229). Later this was refined by Dell Hymes and labeled 'Communicative Competence'; hence the general term for this methodology is "Communicative Language Learning". Hymes (1972) defines "Communicative Competence" as "... competence as to when to speak, when not, and as to what to talk about with whom, when, where, in what manner" (p.277).

At the same time that the concept of Communicative Competence was catalyzing what came to be known as Communicative Language Teaching, Autonomous Learning was entering the field of language teaching through the Council of Europe's 1971 Modern Languages Project (Benson, 2001). Autonomous learning can be defined thusly:

"Autonomy, or the capacity to take charge of one's own learning, is seen as a natural product of the practice of self-directed learning, or learning in which the objectives, progress and evaluation of learning are determined by the learners themselves."  
(Benson, 2001, p. 8)

Communicative Language Teaching, Learner-centeredness and autonomy all bubbled out of the cauldron of the radical 'student power' counter-culture of the late 60s, but soon moved into the mainstream when combined with the constructivist theories of learning. Constructionism was described by Candy (1991; 252) as a network of approaches that holds that 'knowledge cannot be taught but must be constructed by the learner'. Developmental psychology as portrayed by the Russian psychologist Lev Vygotsky and his 'Zone of Proximal Development' has acquired renewed importance in the fields of first and second language acquisition. Vygotsky (1978) explained

the 'Zone of Proximal Development' as:

"... the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers."  
(Vygotsky, 1978, p. 86)

Social constructionism is a sociological theory of knowledge. The focus of social constructionism is to uncover the ways in which individuals and groups participate in the creation of their perceived reality. It involves looking at the ways social phenomena are created, institutionalized, and made into tradition by humans. Socially constructed reality is seen as an ongoing, dynamic process; reality is re-produced by people acting on their interpretations and their knowledge of it. In reference to the Zone of Proximal Development Vygotsky (1987) has stated, "What lies in the zone of proximal development at one stage is realized and moves to the level of actual development at a second. In other words, what the child is able to do in collaboration today [he or she] will be able to do independently tomorrow" (p. 211).

We would be remiss if we failed to point out how closely this coincides with the work of Stephen Krashen and his theory of Comprehensible Input. This theory states that the optimum learning environment should provide new information at the 'i + 1' level, just beyond what the student already knows, but which is still understandable based on the learner's background knowledge and the context in which it is presented. Krashen (1982) wrote: "... a necessary (but not sufficient) condition to move from stage 'i' to stage 'i + 1' is that the acquirer understand input that contains 'i + 1', where 'understand' means that the acquirer is focused on the meaning and not the form of the

message." (p. 21).

Scharle and Szabo (2000) point out three stages in the process of developing learner autonomy: Raising Awareness, Changing attitudes, and Transferring Roles. Raising awareness is the starting point for bringing the learner's inner processes to the conscious level of their thinking. Changing attitudes refers to the breaking of the old patterns of behavior through practicing the skills learned in the previous stage. Transferring roles is the ultimate goal, when the learner can finally take charge of his own learning through loosely structured tasks.

Computer Assisted Language learning, or CALL, can be considered to be a Technology-based approach to Autonomous Learning. Warschauer and Healy (1998) have divided the history of CALL into three distinct phases: behavioristic, communicative and integrative. The behavioristic phase was dominated by multiple-choice quizzes and other drill and test style activities used most often in audio-lingual language labs. The communicative phase used more game and simulation packages which encouraged problem solving and spoken communication. The integrative stage of CALL employs multimedia, hypermedia and interactive technologies to promote an integration of skills. Thus an optimum CALL environment will provide a wide range of input at various levels of difficulty and through a variety of multimedia modalities. The teacher then acts as a facilitator to encourage their access to comprehensible input, but allows the student to select the material autonomously yet in a self-directed manner. Virtual environments, such as MOODLE, combine the best features of the social-constructionist paradigm with the most cutting-edge features of integrative CALL.

The most common procedure for setting up a University-level CALL lab is to pay a large vendor to install a complete suite of expensive, off the shelf hardware, usually based on the inept Microsoft Windows operating system, then run

the system with generic, commercial CALL software. Quite often this software is so general in function that it does not address the goals of any of the specific classes in which it is to be utilized. The institution then usually hires teachers with little, if any, background in computers and computer assisted educational theory. Thus the over-priced lab normally functions as little more than an electronic blackboard, and gradually ceases to be used at all. The fallacious assumption that merely providing more technology automatically leads to better language learning was a trap our university did not succumb to.

### **Blended Learning Environment**

Wikipedia (2006) defines the theory like this:

"Blended learning is the combination of multiple approaches to learning. For example: - self-paced, collaborative or inquiry-based study. Blended learning can be accomplished through the use of 'blended' virtual and physical resources. Examples include combinations of technology-based materials, face-to-face sessions and print materials. The concept of blended learning has particular relevance to language learning "

(Wikipedia

[http://en.wikipedia.org/wiki/Blended\\_learning](http://en.wikipedia.org/wiki/Blended_learning))

This combination of using computers and traditional text-based resources - a 'Blended Learning' environment - is exactly what we sought. Textbooks were selected according to the students' levels and needs and the syllabus was designed to use the spiral effect to reinforce the linguistic categories by reiterations at progressively higher levels. Only then did we start to consider the appropriate software for the lab. One point that we took into consideration was that we planned from the outset to use the

computer component of the lesson plans to supplement the course material rather than to replace it. It was never in our minds to use the computer system to act as a stand-in for the teacher or as a helper for the students. Instead, we created online quizzes based on the textbooks we use. The syllabus for our course was arranged so that one third of the ninety minutes of class time was allotted to the introduction of the new material using the chosen text, then the next third of the class time was to be devoted to task-based communicative activities, either group work or pair work, and the final third of the class time was allotted for the computer-based autonomous learning to supplement the material previously presented.

In dealing with the CALL portion of our lesson plan, we needed specific software to produce the appropriate activities. Thus we chose Hot Potatoes created by Stewart Arneil and Martin Holmes of the University of Victoria, Canada for their company, Half-Baked Software: <<http://www.halfbakedsoftware.com/>>. Hot Potatoes is a software suite that includes six applications which enable teachers to create their own interactive multiple-choice, short-answer, jumbled-sentence, crossword, matching/ordering and gap-filling exercises for the World Wide Web. Figure 1 shows an example of gap-filling quiz. By using JavaScript to incorporate Cubic QuickTime panoramas, mp3 files, and pictures we added a multimedia component to provide the wide range interactive tasks that meshed perfectly with the chosen textbooks. These activities were constructed to be browser-based and were run on a LAN from an Apple X-Server. Since the CALL lab itself was on an intranet rather than connected to the Internet, the activities were also posted on an Internet-connected server at <http://molly.honjyo.reccs.akita-pu.ac.jp/lab/default.html> so that the students could self-access the activities from home for additional study. Figure 2 is a front page of the supplemental CALL page for one of the

textbooks we use.

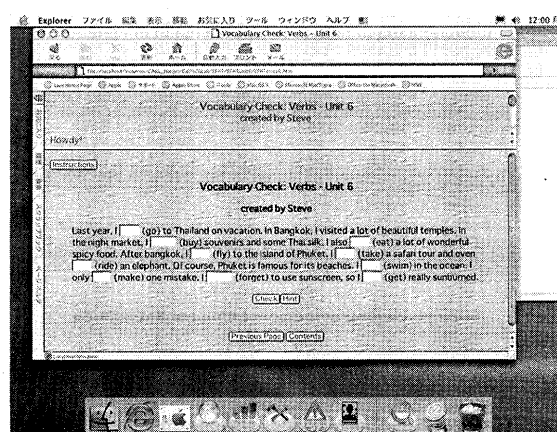


Fig. 1 - A sample page: gap-filling quiz.

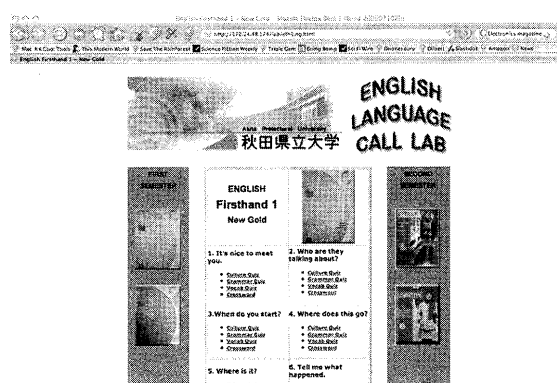


Fig. 2 - CALL lab page for the textbook *English Firsthand 1*.

To complement the in-class communicative tasks and the CALL components, we also introduced Extensive Reading as homework. The students were all assigned a minimum number of book reports on graded readers to be handed in each month. Again, in the spirit of Autonomous Learning, the choice of which book to read was left to the student's own discretion.

### Future Trends

The ultimate goal for our instructional methodology is to support our students' use of autonomous learning both inside and outside of the classroom. By increasing the student's motivation to engage in English language communication rather than reinforcing their previous habits of rote-memorization for better test scores we actually change their attitudes toward language learning. To fulfill this

challenge, we have introduced a virtual learning environment. One of the advantages of the environment is that both instructors and higher-level students can act as facilitators for the lower-level students. Virtual learning environments and social networking tools are at the cutting edge of today's trends in Blended Learning. In the fall of 2006 the Akita Prefectural University CALL lab was updated with Intel-based iMac computers with Internet connectivity. This allowed us to implement a course management system called MOODLE. The word Moodle is actually an acronym for Modular Object-Oriented Dynamic Learning Environment. Moodle is an open source e-learning platform, a free software package designed to help teachers and educators create online courses. These e-learning systems are sometimes called a Learning Management System (LMS), Course Management System (CMS), Virtual Learning Environments (VLE), education via computer-mediated communication (CMC) or just Online Education (Wikipedia, 2006). Rather than switch to MOODLE and abandon seven years of work on the JavaScript Hot Potatoes quizzes, this cutting edge course management system allows for the integration of all the previously developed supplemental material into an even wider suite of cooperative activities. Since Moodle is based on social-constructivism, we have been able to include such new activities as action journals, wiki-based assignments, and forums into the syllabus to provide channels to the students for authentic communicative tasks.

Beyond the MOODLE learning environment we also utilize the integrated iSight webcam and iChat/Bonjour software that comes standard with the iMac to allow our students to conduct group work and pair work exercises as a video-conference, thus allowing interaction with a much wider variety of partners than is usual. MOODLE itself supports RSS feeds for podcasts, and we have links to ESL specific Internet news

sites such as VOA and C/NET. These outside resources can then provide authentic 'i+1' input in the mp3 format that can be utilized in various cooperative activities. All of this is part and parcel of the current evolution of society in general and the Internet in particular. The web as a tool for social constructivism is being referred to as Web 2.0, a term coined by Tim O'Reilly, of O'Reilly Media. He says:

"... the Web 2.0 meme has become so widespread that companies are now pasting it on as a marketing buzzword, with no real understanding of just what it means. The question is particularly difficult because many of those buzzword-addicted startups are definitely not Web 2.0, while some of the applications we identified as Web 2.0, (like Napster and BitTorrent, are not even properly web applications!) We began trying to tease out the principles that are demonstrated in one way or another by the success stories of web 1.0 and by the most interesting of the new applications.

Like many important concepts, Web 2.0 doesn't have a hard boundary, but rather, a gravitational core. You can visualize Web 2.0 as a set of principles and practices that tie together a veritable solar system of sites that demonstrate some or all of those principles, at a varying distance from that core."

(O'Reilly, 20005.)

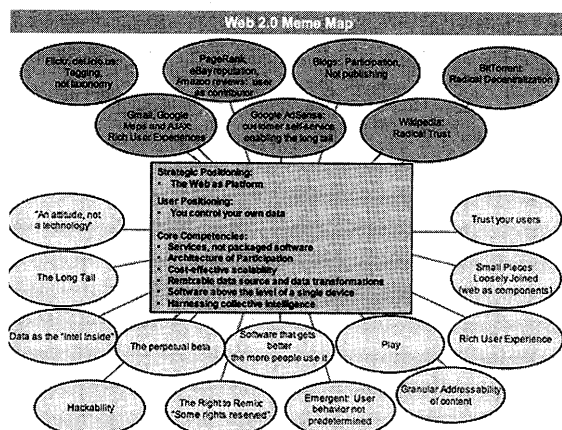


Figure 3 shows a "meme map" of Web 2.0 that was developed at O'Reilly Media

Those parts of the Web 2.0 meme that focus on computer-assisted language learning are now being referred to as CALL 2.0.

### Conclusion

In conclusion, the study of autonomous learning in the CALL classroom shows that such a practice can be utilized most efficiently in a blended-learning environment. Using a CALL lab alone will probably not have the same beneficial effects as those that were proven by the higher than average language acquisition the students displayed in a six-month period. The students improved their language proficiency at an accelerated rate due to the influence of the Blended Learning environment and their self-access to materials that we provided at the i+1 level. This study also shows the most appropriate method for establishing an integrated curriculum utilizing CALL is one that employs teachers already knowledgeable in CALL who can design a customized lab with both hardware and software appropriate to the students' needs. A Blended Learning environment, which has been focused by the idea of Learner Autonomy, has contributed to satisfy the students' need for improvement in the four skills. Most students were eager to use computers as an effective tool to improve their English skills. The emerging social constructionist Web 2.0 technologies such

as open-source course management systems, mobile learning, and podcasting will build upon and enhance an already effective system. Thus allowing students even more autonomy in their quest for improved English language proficiency. But it must be emphasized that the mere introduction of new technology alone does not automatically lead to better language acquisition. The act of changing the student's focus from the goal of passing tests to the goal of international communication can only occur as an emergent phenomenon when teachers facilitate the students in their quest for greater autonomy and motivation. The tools provided by CALL 2.0, especially VLEs like Moodle, need to be skillfully managed by trained professionals to have their intended effect as part of the Blended Learning ecology.

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### Key Words

**Autonomy** - Autonomy, or the capacity to take charge of one's own learning, is seen as a natural product of the practice of self-directed learning, or learning in which the learners themselves determine the objectives, progress and evaluation of learning.

**Blended Learning** - The combination of using computers and traditional text-based resources in the classroom environment.

**Comprehensible Input** - New information which is still understandable: i.e. the optimum learning environment should provide information at the 'i + 1' level, just beyond what the student already knows, but which is still understandable based on the learner's background knowledge and the context in which it is presented.

**Course Management System (CMS)** - Also called a Virtual Learning Environment (VLE), or an E-Learning system. It is a software system designed to facilitate teachers in the management of educational courses for their students, especially by helping teachers and learners with course administration. Both teachers and learners can monitor the system. Though usually considered as a tool for distance education, they are often used to supplement the face-to-face classroom.

### Hot Potatoes

*The Hot Potatoes* suite is java-script-generating software that enables you to create interactive quizzes (multiple-choice, short-answer, jumbled-sentence, crossword, matching/ordering and gap-fill) for the World Wide Web.

**MOODLE** - an acronym for *Modular Object-Oriented Dynamic Learning Environment*. Moodle is an open source e-learning platform, a software package designed to help teachers and educators create online courses.

**Podcast** - a regular, RSS feed of audio material in mp3 format that can be listened to on an iPod or similar device.

**Social Constructionism** - a sociological theory of knowledge. The focus of social constructionism is to uncover the ways in which individuals and groups participate in the creation of their perceived reality. It involves looking at the ways social phenomena are created, institutionalized, and made into tradition by humans. Socially constructed reality is seen as an ongoing, dynamic process; reality is re-produced by people acting on their interpretations and their knowledge of it.