Blended Language Learning

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Abstract

Language learning has increasingly benefited from technology. Its latest manifestation, Computer Assisted Language Learning (CALL) has caused consternation among teachers that believe, rightly, that the best way to teach a language is through face-to-face interaction. This paper argues that instead of seeing CALL as a replacement, it can best be used as a tool to enhance traditional classroom teaching in what is now called blended learning. This conceptual article looks at ways to integrate CALL into a blended language learning curriculum. The English Skills program in the English Department of Showa Women's University, its courses in Oral Communication and use of New Dynamic English courseware are examples of an attempt to blend CALL and the classroom. Current research in this area is explored.

Researchers have been trying to compare the effectiveness of Computer Assisted Language Learning (CALL) and Computer Assisted Instruction (CAI) with traditional classroom learning for decades now. Some see a new paradigm for teaching. Others find little or no difference between the two (Clark, 1985). Many have come to realize that this is a spurious comparison like that of apples and oranges.

After coming to the conclusion that CALL is a tool and not a replacement, research has been focusing more on the interaction between CALL and traditional teaching. This, usually comprised of a combination of traditional classroom and computer assisted learning, is often referred to as hybrid learning or blended learning. We will use the term blended learning because hybrid learning has an additional confusing connotation in mathematics and physics.

Introduction

In this conceptual article we attempt to give an outline of the field of blended learning and how it affects Computer Assisted Language Learning (CALL) and overall language learning. We use Showa Women's University as a specific example, along with New Dynamic English, a software program produced by DynEd Corporation. We hope to eventually show that the combination of software use outside of class, together with focused teaching in the classroom will lead to a greater benefit to the learner than either teaching or software separately. In this article we will
cover literature related to these ideas.

We begin with a working definition of blended learning. We follow this by looking at Japanese students and how they react to technology in general and language technology specifically. We then look at the practice of blended learning and see if the techniques included are appropriate for language learning. The latter sections of this article includes an explanation of Showa Women’s University English department Skills Program which includes a required course for all freshmen, entitled Oral Communication. It is in these classes that Dynamic English has been used extensively for more than a year and a half. We look at practical issues in employing blended learning in this kind of situation. We then take a close look at New Dynamic English, a CALL software program, to see whether it conforms to standards that are now becoming accepted for achieving results for e-learning in a CAI environment. Finally, we look specifically at proposed research currently being conducted at Showa Women’s University English Department.

**What is blended learning?**

At first glance blended learning looks relatively simple. A typical definition is usually something like, “Blended learning is the term used to describe learning or training events or activities where e-learning, in its various forms, is combined with more traditional forms of training such as ‘classroom’ training.” (Stockley, 2003) This becomes more complex as we try to define what the various forms of the e-learning are. One needs to consider the content or information of the e-learning course as well as the instructional methods or techniques that help people learn the content. According to Clark and Mayor (2002), there are five types of content in e-learning. *Facts* are specific data, *concepts* are categories that include multiple examples, a *process* is a series of events, *procedure* is a step by step process, and *principle* is performing a task following guidelines.

The technological considerations such as delivery method (CD-ROM, Internet, LAN) also affect aspects of the e-learning software such as user interface. This leads to consideration of delivery format; will it be text, pictures, audio, or video? “A common model is delivery of ‘theory’ content by e-learning prior to actual attendance at a training course or program to put the ‘theory’ into practice. This can be a very efficient and effective method of delivery, particularly if travel and accommodation costs are involved.” (Stockley, 2003)

Probably the most interesting and least considered aspect of e-learning courses are the reason they are used and how they fit into the overall blended learning plan. E-learning is often seen as a business solution to training programs for both basic and complex skills required to accomplish some specific task. Most of these programs were created for economic reasons instead of
pedagogical needs. (Schank 2002, Rosenberg 2001) Rosenberg, for example, puts “e-learning lowers costs” as the first of ten benefits of e-learning. Other benefits include enhancing business response, building community, flexibility of schedule and content (scalability, consistency or customization), and timeliness. Note that most of these concern deployment and administration and have little to do with pedagogy.

Rosenberg (2001), in his seminal work on e-learning, in his chapter on integrating e-learning and classroom learning, asked the question, “How should the e-learning and classroom learning components be sequenced?” and answers it:

“E-Learning tends to be short, targeted, task driven, and episodic, while classroom learning tends to be longer, less well-targeted, and programmatic. For some learning tasks the former is ideal; for others the latter is desirable. Sequencing for efficiency and effectiveness may often produce conflicts. There may be some pressure to combine all the classroom programs into a single, short, but intensive experience, to reduce travel and downtime. But the best learning plans usually call for more distributed classroom experiences so that application, mentoring, online learning, and the integration of new knowledge with what’s already known can take place between events.” (Rosenberg, 2001, p.119)

Changing views of learning

Blending e-learning with traditional classroom instruction is changing the way we look at learning, and even language learning. Roger Schank as long stipulated that the classroom is one of the worst places to learn. If you can imagine denuding a room of all decorations and adding only utilitarian furniture as an ideal learning environment, you’ll do well in the classroom. E-learning gives us more options for experiential learning outside of the classroom. “The classroom will no longer be the default delivery system.” (Rosenberg, 2001, p.120)

The industrial model of education is coming under scrutiny and reevaluation similar to that of recording companies trying to protect their intellectual property, which depend on outmoded systems of delivery. University administration will have to change drastically, even the most basic organizational concepts such as schedules. “Course start and end dates will become increasingly irrelevant.” (Rosenberg, 2001, p.121)

More importantly, however, are pedagogical implications. Educators are finally coming to realize that lectures are both inefficient and ineffective. Roger Schank became famous trying to teach computers to learn (artificial intelligence, or AI), but later found people much more interesting. He has applied some of the ideas and concepts from AI to e-learning.
One of the most basic concepts deals with the environment of e-learning. “For learning to take place, there has to be expectation failure.” (Schank, 2002, p.62) When learners expect a certain outcome and it does not occur, two things happen, according to Piaget (1970): assimilation and accommodation. Learners have to either assimilate new information or accommodate their world view. “These forces are kept in balance by an adaptive and dynamic process of equilibration.” (Weigel, 2002, p.3) Cognitive Science has built upon this base and has lead to some surprising discoveries for technology and learning. Collins, Brown, and Newman (1989, p.454) have identified six teaching methods that facilitate cognitive apprenticeship: modeling, coaching, scaffolding, articulating, reflecting, and exploring.

A final dichotomy to consider is the ongoing debate about whether learning is the process of acquiring a set of skills by training or applying a set of guidelines presented to the learner by the educating organization. This will be discussed at length in the section on language learning below. For a thorough discussion of Blended Learning and myriad examples, please see the TAFE site (NSW, 2003)

Why is it good for Japanese students?

When adapting software for other languages and cultures, one must be careful of how that culture affects learning. “Language and localization may reach your bottom line fast, but ignore culture and you’ll sink from the weight of the world.” (Conner, 2000). Even so, one must strike a balance between cultural differences and individual differences. “A significant caveat involves the fact that learner variables, like cultural labels, differ from individual to individual and therefore must be used only for generalization and analytical purposes.” (Strother, 2003, p.1979)

Hofstede (1980) identified four dimensions of national culture that can serve as a basis for comparing the dominant value systems. Hofstede’s four original cultural dimensions are

1) **Power-Distance** – the degree of acceptance of inequality of power and authority.
2) **Collectivism versus Individualism** – the relationship between the individual and groups.
3) **Masculinity versus Femininity** – emphasis of “masculine” traits such as assertiveness, and competition as opposed to “feminine” traits such as nurturing and cooperation.
4) **Uncertainty Avoidance** – tolerance for ambiguity or unexpected situations.

“On Power-Distance, Malaysia ranks in first place while Hong Kong and Singapore fall in the top third. South Korea, Taiwan, and Thailand rank near the middle of all nations, while Japan and the United States exhibit a weaker Power-Distance belief structure. Individualism contrasts with collectivism. The United States ranks first place in individualism with Japan ranking the highest among the Asian nations...In the category of Masculinity, Japan ranks number one among all nations surveyed...For Uncertainty
Avoidance, Japan, in seventh place followed by South Korea, places the highest value on Uncertainty Avoidance among the Asian nations. Interestingly, Hong Kong, Malaysia, and Singapore have a higher tolerance for uncertainty than does the United States.” (Strother, 2003, pp.1980–81)

Adapting both textbooks and courseware for cultures is a necessary step in the process of creating a blended learning course. One example: “Traditional e-learning or blended learning environments can tap into the preference for collectivism by including a variety of collaborative team projects, either online or within the classroom portion of a blended learning situation.” (Strother, 2003, p.1981)

Drawbacks for Japanese language learners is the cultural avoidance of error which, according to Roger Schank, is integral to any kind of learning. “Two guiding principles of failure: 1) Real thinking never starts until the learner fails. 2) It is easy to recognize expectation failures because people insist on explaining them.” (Schank, 2002, p.63) Both avoidance of errors, and reticence to explain them, often lead to a lack of feedback by both the courseware and teachers. One of the major culprits in this development of avoidance of error is the Japanese educational system, indeed any educational system as it currently stands. “Most kids don’t mind failing until they start school. As long as parents tolerate mistakes as good humor, children are perfectly willing to mess up time and again. All this changes when school begins and failures become the subject of public ridicule and grades are posted for everyone to see, or a teacher chastises a student who does poorly in front of the entire class.” (Schank, 2002, p.67) On the other hand, computers are seen as less anxiety inducing and therefore very appropriate for giving feedback especially on aspects of the language such as pronunciation and other basic linguistic skills.

**Blended learning at Showa**

The English Language and Communication department has as an integral part of the curriculum a skills component for first and second year students. During this time students take between twelve and sixteen hours of required skill related courses. Among these are two courses of Oral Communication each which meets 90 minutes for approximately 30 weeks each year. One course is taught by non-native speakers, the other by native speakers of English. After running a pilot course for one semester in the previous year, we have instituted the use of New Dynamic English (NDE) as an integral part of the course taught by native speakers. Assigned as homework, we use this courseware to augment material in the traditional classroom. Ongoing research by the multimedia group is evaluating whether this combination is effective.

**How does New Dynamic English work?**

Not surprisingly, New Dynamic English (NDE) follows many good practices of e-learning. What
is surprising is that recent innovations in research from cognitive science have confirmed many of the directions that New Dynamic English has taken for their user interface and learning philosophy. Below we look at some ideas presented in the book *e-Learning and the Science of Instruction* by Ruth Colvin Clark and Richard Mayer, and explain how they are manifested in the software by DynEd.

There are three types of learning: receptive, directive, and guided discovery. Receptive learning is usually seen as having a goal of information acquisition and is usually used to inform the learner of the learning goals. Directed learning is for response strengthening and is most often equated with the *practice* phase of the traditional paradigm of “Present, Practice, Perform” in language teaching. Guided discovery is for knowledge construction and is usually the most beneficial in the long term for retention of skills. NDE is replete with opportunities of practice of key language points. This practice is configured for each individual student based on their performance. If a student answers many questions correctly the difficulty is increased. If a student misses many questions some of the material is repeated in different ways and questions become easier.

One of the most important distinctions in creating a user interface for learning is to realize that human memory has two channels for processing information: *visual* and *auditory*. There are also two kinds of memory: *working memory* and *long term memory*. There must be a transfer between the two for learning to occur. This is called *encoding*. Active processing in the working memory is called *rehearsal*. After the information is rehearsed, it is then transferred to long term memory. The final requirement for learning is to be able to *retrieve* from long term memory the new skills or knowledge.

Steven Krashen’s input theory flies in the face of this assessment. The theory advocates input at a level just beyond processing capability by the learner. The problem is that this input is not presented often enough so that students can rehearse, or practice, new material so that it has a chance to be transferred into long term memory.

**Dynamic English and e-learning principles**

Principles developed by Clark and Mayer show how processing by the learner should take place.

“The cognitive theory of multimedia learning is based on the assumptions that (a) all people have separate channels for processing verbal and pictorial material, (b) each channel is limited in the amount of processing that can take place at one time, and (c) learners actively attempt to build pictorial and verbal models from the presented material and build connections between them.” (Clark and Mayer, 2002 p.102).
The multimedia principle: new information should be presented in both words and graphics. This helps learners with different learning styles to consolidate information if it is presented in multiple ways. You must be careful though, to make any kind of graphic representations relevant and not decorative. New Dynamic English (NDE) has very simple static graphics with audio input as its main interface in the presentation sections (the first three sections of six in any level).

The continuity principle: place printed words in close proximity to graphics. The visual and explanatory text should never be separated. Feedback should always be on the same screen. Links should appear in the same browser window and directions should be encoded on the same screen as well. The NDE interface is consistent throughout the course, with all pertinent information presented in succinct form on the same screen.

The modality principle: present words as audio narration rather than on-screen text. This is to avoid overloading the visual memory. Although NDE allows for both text presentation (in the form of subtitles) and translation to the native learner’s language (in our case, Japanese), these require toggling with a special button. They can both be disabled by the teacher.

The redundancy principle: presenting words in both text and audio narration can hurt learning. The learning styles hypothesis maintains that some people learn visually and others through the auditory channel, and this sounds logical but is not borne out by research. Presenting text and audio at the same time often leads to confusion in pronunciation. This is because learning styles are based on information delivery theory of multimedia learning, which holds that learning consists of receiving information. NDE is almost exclusively aural/oral in its presentation of language. Students learn the pronunciation and internalize the language before it is presented in text form.

The coherence principle: adding interesting material can hurt learning. Entertaining stories, background music, and detailed textual descriptions can lead to distraction, disruption, or seduction to other materials. Focus is the key here. NDE is very focused, some complain that the interface is too sparse, too “old fashioned” and does not contain all the “bells and whistles” that sell software, but actually decrease learning.

The personalization principle: use conversational style and virtual coaches. A conversational style of instruction engages the prime cognitive processing in the learner. People work harder to understand material when they feel they’re in a conversation with a partner rather than simply receiving information. Using a pedagogical agent also enhances motivation. The virtual
pedagogical agent does not need to appear a human and often takes the form of a cute animal, but the agent does need to sound human. (Beck et al., 1996). NDE has a relaxed feedback system that informs, in both male and female voices, of success or failure for feedback events. They may be disembodied, but often sound like friends rather than teachers.

A good rule of thumb is to avoid e-learning with questions that require simple regurgitation of information provided in the material. The encoding specificity principal states that transfer is maximized when the conditions of retrieval (when using the language taught in a real situation) match those present while encoding (during learning). Asking the question why at the end of practice also enhances learning greatly. Questions should be interspersed throughout the lesson rather than all placed at the end. But according to the National Research Council, “the so called spacing effect—that practice sessions spaced in time are superior to massed practices in terms of long-term retention is one of the most reliable phenomena in human experimental psychology. The effect is robust and appears to hold for materials of all types as well as for motor skills” (1991, p.30). NDE constantly and consistently intersperses presentation with evaluation. As the unit proceeds, questions put to the learner elicit statements that are closer and closer to what is needed for interaction in real situations. The final section of each unit consists of branching conversations with video shots of native speakers. Students speak and the conversation continues only if the Speech Recognition software can understand the student (Note: recognition parameters can be adjusted by the teacher or the student so the software can be more or less exacting.)

While practice may not make perfect, it will improve performance indefinitely although at diminishing levels. Another way to enhance practice is to train learners to self question during practice sessions on the computer. This is where New Dynamic English truly shines. It allows the student a variety of modes and environments to practice and internalize language presented.

"Nothing anyone tells you (no matter how eloquent the speaker or insightful his or her words) will do any more than inspire you. You must internalize procedures to do a better job. To do this, you must try them out and receive help when you fail.

Even if you could learn to do a better job by hearing about a marvelous new management technique, it still wouldn’t matter: If you don’t practice that technique over and over again, you won’t remember it for long.” (Schank, 2002, p.15)

Examples are another way to increase efficiency of learning. “in courses that are teaching new tasks, learning time can be saved by replacing some practice assignments with worked examples ....” (Clark and Mayer, 2002, p.177).
Collaborative learning can also increase the acquisition of new skills. Buying grades is one of the skills that are the best fit for this kind of learning. Computer activities such as chats, message boards, threaded discussion boards, online conferencing, e-mail, and listserv allow students to interact with each other and build new knowledge constructs instead of trying to manage knowledge presented by another source.

Does blended learning work with languages?

If we see language as a process of developing a very complex skill, which is an amalgamation of smaller, more directed skills, then blended learning is an ideal combination of tools. Combining the opportunities of presenting skills in class, practicing them on the computer and later integrating “the new with the known” in classroom dialog with the teacher and other students, CALL and classroom can support each other.

The main problem with this approach is the definition of the word skill, and how that will affect the division of learning between CALL and the classroom. “Any human action or capability can be referred to as a skill, so the term offers us very little to go on if we want to teach skills.” (Schank, 2002, p. 87) Schank introduces the idea of “scriptlets” which seem very similar to functions in language teaching. “We might expect our employees to know how to do systems installation or to sell, for example. But, although these may seem like skills, in each case they are really collections of a large number of scriptlets. This becomes clear when you think about teaching someone to do any of these things.” (Schank, 2002, p. 87) The parallels between training business skills and language learning are remarkable. Language often is a required business skill.

“In business, this means we have to stop thinking about teaching management techniques or communication methods. Why? Because these are not scriptlets. If we want students to get good at managing or communicating, we have to understand the difference between a skill that is teachable and a skill set that is not teachable by itself. Whatever managing employees or handling customers might be, these things cannot be only one skill. They are collections of various, possibly quite unrelated scriptlets.” (Schank, 2002, p. 87)

One must be careful to differentiate “scriptlets” from earlier behaviorist habit development which did not take into account any higher order cognitive process. “The influence of behavioral psychology is particularly evident in what might be termed the miniaturization of skills. The bias of behaviorism is toward bite-size chunks in skill acquisition. A skill is assumed to be cumulative in character, so that small skills can be compiled (often at some undisclosed later date) into larger and more useful ones.” (Weigel, 2002, p.103)
The role of training may be best put by Schank:

“To teach trainees to deal with people, you must teach them to deal with specific situations, not bland generalities. Any time you talk about what one should do in general, you are wasting your time. People learn from repeated experience. Someone who is good at handling a difficult situation is likely to have dealt with that situation many times before. Since this is obvious—we all know it to be true—training must help a student start experiencing whatever it is we think they may experience on the job. Practice, practice, practice. This is how scriptlets are formed. You must figure out the very thing that they will encounter on the job and make sure trainees encounter it, and figure out how to deal with it, in training.” (Schank, 2002, p. 88)

The role of practicing, which is so central to NDE’s philosophy, and to which its software excels, is also returning to prominence in the language learning field. “The only way to learn the scriptlet is to practice it. The essence of real education is repeated practice—ask any musician.” (Schank, 2002, p. 88)

Motivation is an excellent indicator of success in linguistic acquisition. “To motivate a student to learn a scriptlet, one of three things needs to be true: (1) The student must find the result of the scriptlets to be intrinsically rewarding, (2) the scriptlet must be part of a package of scriptlets that is intrinsically rewarding, or (3) the scriptlet must be an example of what we shall term in order to learning.” (Schank, 2002, p. 88)

Research questions

When Clark (1985) examined samples of studies in earlier meta-analyses, he found that effects were much smaller if the same teacher taught both the computer and traditional classes. There was no difference between computers and traditional teaching when instructional method was controlled. Since 1985, however, e-learning (and CALL) programs have changed, fueled by concepts discovered in cognitive science and education.

After collecting data for one year, getting student feedback on Oral Communications classes and harvesting specific data on CALL from the New Dynamic English Program (NDE), a research group at Showa is about to analyze data to answer the following questions:

1) Does using courseware support for traditional classroom interaction improve language acquisition?

2) Does closer integration of the courseware and classroom interaction improve language
learning?

3) Are there any differences in the effect of courseware on language learning for different proficiency groups?

4) Are different aspects of language (functions, notions, grammar, vocabulary) affected differently by courseware use with traditional classroom teaching?

Please visit http://www.showaelc.org/research/ for results of the series of five experiments. A web-based version with links to related information is also available there. Any feedback would be appreciated. mmg@showaelc.org

Bibliography


