

STUDENT ATTITUDES TOWARDS COMPUTER ASSISTED LANGUAGE LEARNING

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Abstract

This article presents the preliminary findings of a broad study aimed at assessing the extent to which ESOL students, in the English section of the School of Languages at Auckland University of Technology, value computers in their language courses. The 169 students from intermediate to advanced classes answered a questionnaire relating to their use of Computer Assisted Language Learning (CALL). The study found that 81% of respondents believe studying with computers improves their English and 65% want computers used more in their English classes. Students rated the computer lab a superior environment for listening tasks and considered it more flexible in terms of being able to cater for differing learning speeds. It was also considered intrinsically more interesting than a regular classroom. However, the traditional classroom was considered more suitable for general language learning and in particular for improving writing, speaking and vocabulary skills.

Background

Computers have been a resource available to language teaching and language learning since the 1960s. Pennington (2004) asserts that key elements of language learning are interaction with people and with input. The 'people' are the students and teachers and the wider community speaking the target language. With the recent innovative collaborative tools (Blackboard, WebCT, web publishing) that utilize web-based communication, Pennington's 'people' involvement has been widened to include a global community where language use can be sustained and developed through cultural exchanges. The 'input' for language learning is language which a learner hears or receives and from which he or she can learn. In addition it is in its input that Information Technology (IT) demonstrates great potential for enhancing language learning because of the variety of the input that electronic resources make available such as through email, the Internet, chat rooms and specific types of hardware and software. This paper uses the term Information Technology and the abbreviation IT to refer to electronic information technology and specifically to the use of computers.

Computers allow the language learner and teacher to have access to authentic material (as in material available to native speakers) via the information put into the computer from e.g. software, Online learning, or the Internet. This material includes language currently in use through spoken (e.g. news items, video clips) and written corpora from a wide range of genres. The utilization of this material makes it possible for teaching using a pedagogy based on patterns of occurrence in specific contexts (Pennington, 2004). Therefore from the point of view of informational resources and tools for language teaching, IT offers a great expansion of the amount, the variety, and the accessibility of input to students and to the contexts of learning and teaching.

One reason for the acceptance of computers as a medium for language learning is that computers have high face value validity, in that they are often perceived by both students and teachers as being important to use e.g. in their other courses, for communication and for playing games. According to Warschauer (2000), more than 95% of university students in the United States use the Internet to conduct research, search for jobs, and stay in touch with friends. Computers are already widely used by most students. However not all teachers are enthusiastic users of computers, nor do they all perceive real benefits for English learning. Hopefully increased computer use by teachers for making worksheets, keeping records and finding lesson plans on the Internet will help these teachers realize that computers are not only beneficial for themselves but also for students of English.

According to Stevens (1992), due to the popularity and frequency of computer use, Computer Assisted Language Learning (CALL) presents a unique opportunity to provide students with a rich environment containing functional (e.g. booking local or overseas flights), communicative (e.g. using email), and interactive materials (e.g. Blackboard) in a given target language. English is the current most common language on the Internet but all the major languages are there too. CALL is offered by means of a delivery system that students are likely already familiar with through other courses, at work or in their social lives when communicating with friends etc. This popularity and frequency is in contrast to language laboratories which although they perform an important function in language learning, are not used in other learning or home situations and therefore do not have as high a face value as do computers.

Two studies (Ybarra & Green, 2003; Warschauer, 1996), have shown that computer technology has helped English students develop language learning skills. Warschauer (1996) identified three common factors that are provided by a technology-enhanced setting: communication, empowerment, and learning. Communication concerns the finding that students liked the ability to communicate with others and to engage in real, as opposed to contrived, communicative acts. Empowerment describes the finding that students felt empowered in the technology environment since they felt less isolated and were less afraid to contact others. The learning factor describes the finding that students believed the computer gave them certain kinds of control over their learning by enabling them to learn faster and more independently and to write more creatively.

The benefits for learning a language through using computers have been well-documented (Kaufmann, 1992; Lee, 2001; Stepp-Greany, 2002; Ybarra & Green, 2003). They include such benefits as motivation, improvement in self-concept and mastery of basic skills, enhanced achievement and individualization. The benefits of using computers to both teachers and students of English justify their use in language classes. Not only can computers handle a range of activities and carry out programmed functions very quickly, they can check exercises after they have been completed or attempted, move students gradually from easier to more difficult exercises according to their levels and abilities and when students fail to answer questions correctly the computer can prompt, simulate, drill or explain. More recently, a range of online collaborative tools take advantage of email, web conferencing (e.g. Blackboard, WebCT), web-publishing where teachers can set up editorial work with first drafts and revisions (Johnson, 2004), chat rooms and discussion forums with synchronous (real time) and asynchronous (not at the same time) communication.

However, having accepted that CALL is considered extremely beneficial for language learning, Pennington, (2001, 2004) asserts that our use of CALL is possibly less in evidence in the practices of language teachers than it was in the 1980s when teachers first began experimenting with CALL software in their classrooms. She maintains that there has been a shift in perspective within education away from the forms and functions (e.g. types of software and activities) associated with CALL to those associated with IT (topics of connectivity, the Internet, globalisation and information). Pennington argues that CALL seems to have moved off the main agenda of language teaching, especially in terms of innovative developments of the technology for pedagogy. However has CALL moved off the main agenda for our language students?

At present, researchers are actively probing the effectiveness of CALL in order to help course designers construct effective software, to help classroom teachers optimise content and language learning with the aid of computers and to assist administrators with purchase and effective utilization of computers (Cunningham, 2000). This study fills a gap in the research by focusing on the students and their attitudes towards the use of CALL. This study intends to answer the following questions:

- To what extent do students value their computer laboratory classes for English learning?
- How does this compare with their classroom learning of English?
- Which software programmes do the students prefer and why?

The Study

Pennington's question asking whether teachers are retreating from IT, initiated the interest in finding out more about this topic and in particular to find out if our students are retreating from IT. At the School of Languages, Auckland University of Technology (AUT), most English classes had been using computer laboratories since the 1990s. However there had not been any research projects relating to CALL at AUT. Because this was a preliminary study in an area that lacked any previous research, the study aimed at gathering information on a wide range of related topics and thus is broad in nature.

The study aimed at questioning a large pool of students, in order to get as big a sample as possible so that the findings would be statistically significant. The participants were in classes studying Intermediate and Advanced English assuming that at these levels the students would be able to understand and read the questionnaire. The participants were 169 students enrolled in certificate level English language courses at Auckland University of Technology, Semester 2, 2003. These students were L2 students from the following courses: Certificate in English (CEL) levels Intermediate and Post Intermediate, English for Academic Study (EAS), Work and Income New Zealand (WINZ) courses for qualified migrants looking for employment, and Training Opportunities (TO) courses for unemployed refugees, Pacifica students and migrants with low qualifications.

The geographical distribution of students was as follows: China 55%, Korea 10%, Sri Lanka 2.4%, Taiwan 2.4%, Thailand 1.8%, Indonesia 1.8%, Japan 1.8%, India 1.2%, and at <1% each from Iran, Indonesia, Russia, Somalia and Turkey. Over 80% of the students were between 20 and 40 years of age with females 65% and males 35%. They estimated their own computer skills at being beginner level 29%, intermediate 50%, and advanced 21%.

In the School of Languages, teaching staff are presently developing online aspects to language courses involving the use of Blackboard applications such as forums, chat rooms, posting of course material for vocabulary, listening and pronunciation activities, as well as in using assessment tools. However at the time of this study computer classes mainly involved students in Internet searches for research purposes or job search, writing skills classes using word processing and email, software use for skills development and also web-based activities e.g. virtualilc.com for listening exercises and grammar practice.

In order to gather qualitative data, students were invited to take part in a 15-20 minute taped interview and 12 of the 169 students volunteered for this. Of these 12 interviewed students seven were from China, two from Russia, and one from Iraq, Somalia and Turkey. Six assessed their computer skills as being advanced, five as intermediate and one as a beginner. Ten of the students were female.

Data Collection Instruments

- **Questionnaire:** Data were collected from 169 students. The questionnaire was adapted from Ayres, 2000 with his consultation and permission. Each consenting participant completed the questionnaire anonymously. Students had previously had an opportunity to ask questions about the research. The questionnaire took approximately 20 minutes to answer depending on the English level of the research participant. The questionnaire consisted mostly of responses requiring ticks or one word answers.

Once questionnaires were returned answers were put into SPSS software (a statistical package for the Social Sciences) to enable the calculation of totals and percentages of the responses to the questionnaire.

- **Interview:** Twelve of the 169 students involved in the questionnaire, volunteered to have a 20 minute taped interview with the researcher. The twelve transcripts were taken from the tapes and answers to questions were coded according to the following themes: computer experience, what content they covered in the computer classes, comparison with the language laboratory for listening, comments re software, and desired amounts and types of teacher input.

Data Analysis

Data were analysed to see if there were any significant statistical differences between the various groups represented in the sample such as differences of age, nationality and computer level. A chi-square test was performed on the 169 questionnaires, to test whether these different groups answered questions pertaining to motivation levels and overall perceptions of CALL in statistically different ways to another group. It was found that there were no statistical differences between students of any particular gender, age or nationality. Thus, as was the case in Ayres's 2000 study, the students were grouped as one homogenous group for the analysis of the questionnaire data.

Results and Discussion

Research Question 1: To what extent do students value their computer laboratory classes for English learning?

In this section of the questionnaire students were asked to state their perceptions of CALL. A series of statements was given and students were asked to choose whether they Agreed Strongly/Agreed (combined in Table 1), had No Opinion or were Neutral, or Disagreed/Strongly Disagreed (combined below in Table 1).

Table 1: General perceptions of CALL (reported in percentages).

Studying with computers	Strongly agree/agree	Neutral	Strongly Disagree/disagre e
gives good information	87	11	2
is relevant to my English needs	83	15	2
allows me to work at my own speed	83	14	3
improves my English	81	14	5
helps me learn new vocabulary	79	12	9
gives me good control over my learning	76	15	9
is easy	74	16	10
is motivating	72	23	5
is linked with what I do in the classroom	66	24	10
should be used more in class	65	21	14
is not an important part of the course work	17	18	65
is difficult because I do not have good communication skills	14	14	72
does not help me to do more work	11	11	78
is not interesting	8	9	83
is a waste of time	7	12	81
is too complicated	7	19	74

A large number (87%) of the 169 respondents either agreed or strongly agreed that computers give good information. This supports Pennington (2004), as referred to in the introduction where she describes language learning as involving interaction with input and with people and describing CALL as having superior, highly focused relevant input which can greatly enhance language learning.

Results confirm similar studies, (Ayres, 2000; Cunningham, 2000; Jones, 2001a). In Jones's study, for example, 97% claimed they wanted to develop their computer skills in order to learn English, and 88% believed that the computer could help them improve their English. Asked about the ways in which the computer could do this, 15% wrote, "The computer is in English", (Jones, 2001a). This comment supports Stevens in his assertion that computers have high face value validity in that presently the Internet uses English as the main language of communication creating a greater need for our students to learn English.

In this research project 81% of respondents found studying using computers improved their English. Another finding was that 83% of students either agreed or strongly agreed that studying with computers is relevant to their needs. Of the 169 students, 73% agreed/strongly agreed that computers gave them good control over their learning and 83% agreed that computers allowed them to work at their own speed. On the topic of ease of use, 74% agreed/strongly agreed that using computers is easy. All these findings provide strong support for using computers in our English language classes.

The majority (61.4%) of the 169 students wanted more time in the computer laboratory. Over 60% of the participants had one hour a week in the computer laboratory. Around 20% of students had approximately two hours a week and the remaining 20% used computers for less than one hour per week. In her study of the QTKanji project, Corder (2002) found a correlation between frequency of computer language usage as well as how the software is used, and benefits to performance in terms of tests and examinations. Levy, (2004) and Hoven (2003), also note that regular use is required in order to achieve benefits from using computer programmes.

Table 2: Is this enough time. Why/why not?

YES - 38.6%	NO - 61.4%
Reasons: I've got a computer at home 24.3%	Reasons: Have lots of good software 57.1%
Need to have software explained more 7.1%	
Other Reasons: 7.2% Can use library computers Learning English needs communication with teachers Not Good for the eyes	Other Reasons: 4.3% Need more thinking time Need to practice more as will forget

Most of the 169 students wanted more time in the computer laboratories either because they like the English language software or because they feel they need for more practice time. Those who indicated they already had sufficient time in the computer laboratories commented either on having computers at home or that they wanted more communication with teachers. A few commented on the physical problem of getting eye strain when using computers. This is an important consideration for teachers who could include more interactive group activities into the computer laboratory requiring more movement by the students. Teachers could also encourage students to use micropauses where students stretch, drop their arms and breathe deeply for 5-10 seconds every 3-5 minutes to ensure minimal physical discomfort from extended periods at the computer.

Of the 12 interviewed respondents, nine said they wanted more time in the computer laboratory and three said they were satisfied with what they had. Two respondents said they wanted one extra hour per week and that this hour could be taken from classroom activities such as reading or writing. Another wanted four extra hours to be taken from speaking practice as she felt she could speak to students any time. The three who said they had enough time in the laboratory said they used the self access computers in the library for extra language practice. These findings support theories about individual learning styles, indicating that learner needs vary and that some students require more practice in certain language skills as compared to other skills.

Research Question 2: How does the computer laboratory compare with classroom learning of English?

Participants were asked to state what mode of learning they saw as being more helpful to their English language learning. Table 3 presents the findings for this question and clearly shows that these students favour classroom based teaching over using a computer for speaking and writing but that CALL holds a strong place for listening, spelling, adaptability to speed of learning and interest levels. The computer laboratories and the classroom were considered of equal importance for grammar at 49%, adaptability to way of learning 53% and for motivation 43%.

An earlier study, at an Auckland institute with a similar profile, found writing scored highly for CALL and that listening scored highly for the classroom as did vocabulary development and grammar. Variations in responses could be accounted for in the software available to the students and in the skills taught in the computer sessions. An example of this in this study is where English for Academic Study (EAS) students choose the computer laboratories in preference to the classroom for listening in greater numbers than CEL, WINZ or TO students possibly because they spend nearly half of their CALL time on listening activities. Likewise WINZ students placed writing higher in their preferred mode than other groups due perhaps to their spending most of their CALL time on developing writing skills. This supports both Corder (2002) and Levy (1997) in asserting that regular use is important for achieving benefits from using computer programmes.

Table 3: Preferred modes of learning (reported in percentages).

Which is more.....	Classroom	%	Both Equal	%	Computer	%
Useful for listening	61	31	29	31	9	38
More interesting	18		44		38	
Adaptable to speed of learning	23		41		36	
Useful for spelling	36	29	39	41	25	30
Useful for reading	47	41	39	35	14	24
Useful for grammar	41	29	46	49	13	22
Adaptable to my way of learning	29		53		18	
Useful for vocab. development	43		39		18	
Motivating	43		43		14	
Useful for writing	34	53	45	35	20	12
Useful for speaking	77		19		4	

Results from Ayres' 2000 study where significantly different to these research findings have been put in italics on the right hand side of each column.

The comment from one of the interviewed students, "no assessment so not important", confirms Hatasa and Hatasa (1997), regarding CALL and the need for it to be integrated into the assessment programme. The importance of including assessment into the computer laboratory curriculum also supports survey data from beginner Spanish classes that used a combination of technologies (Stepp-Greany, 2002). Students in this study appeared to value multimedia components that directly related to exams. Stepp-Greany suggests that measures must be implemented that link CALL activities to regular assessments so that students attribute relevancy and educational benefits to technology-enhanced instruction. Levy (2004) maintains that students prioritise their learning based on what is assessed. Also Levy referred to the role that Institutions played in how students might perceive the importance of CALL. If computer classes are e.g. placed last period on a Friday then students may read into this that the computer class is an add-on and not an integral part of the English language programme.

Comments by two interviewed students referred to how they are less embarrassed in the computer room because they can ask individual questions of the teacher and also get feedback from the computer itself. One of the students said, "Most students don't know English and they get embarrassed. In the computer room they can listen and practice it is much easier. In classroom they don't want to look funny. Some are older maybe engineers- have been something in own countries, now they cannot even express simple ideas".

Other comments related to "liking the fast information" and "I don't need to wait for the teacher". The enjoyment factor of using computers, the integration aspect where the skills of reading, writing, listening and speaking can be linked to a topic and the individual aspect with the comment "I can learn by myself" were also commented upon.

Research Question 3: Which software programmes do the students prefer and why?

Hoven (2003) found in her research that there was a clear increase in comfort and confidence levels among students using technology to learn a second language. The more students use a programme the more confident they became. In addition, the use of good learning strategies embedded in the software programmes did seem to be helping students to become more aware of the strategies they use to learn. This suggests that it is important to plan the computer sessions carefully to help students to be aware of learning strategies. It is also important that teachers monitor what activities are being done.

The participants in this study use a number of different language software packages as part of their courses. With the wide range of commercial software programmes available to language teachers, selecting those that best suit the needs of students has become a challenging task. It was the aim of this section of the study to involve the students in the evaluation of software. Data was collected based on the criteria for the selection of CALL software listed by Lee, (2001). The questions in this study were on student perceptions of the usefulness, ease of use, feedback facility, adaptability to rate of learning and enjoyment factor of the six software packages predominantly used in the language courses of the students in this research project.

Table 4: Software evaluation

Which software programme is:	Issues in English	Study Skills Success	Tense Buster	Virtualilc	Decade	Wida
the easiest to use	64%	9%	11%	8%	8%	0%
most helpful for learning English	41%	17%	23%	11%	7%	1%
best at giving feedback	36%	24%	22%	7%	10%	1%
best at letting you work at your own rate	44%	16%	19%	15%	5%	1%
most enjoyable	41%	16%	14%	18%	8%	3%

The first three software packages namely Issues in English, Study Skills Success and Tense Buster are interactive computer programmes designed for adult students of English. Issues in English is an interactive CD-ROM for teaching and testing English language skills in the areas of listening, reading, writing, grammar, vocabulary and pronunciation. It covers the ranges from beginner to advanced levels and is designed for students who are working independently at home, in a learning centre or in a class setting. There are the same types of activities for each of the eight issues at any one level. Most exercises are corrected by the computer and most exercises come in a Learn and Test mode.

Tense Buster for beginners to advanced levels of English is grammar based with listening only to instructions. However the grammar section is comprehensive and gives the rules for a grammar item plus practice and test opportunities with detailed feedback and progress features. The vocabulary section gives dictionary meanings for selected words and some pronunciation information.

Study Skills Success is aimed at students in the final years of secondary and the first years of higher education. It covers lectures, note taking, analysing an assignment, planning and writing it, as well as developing a student's ability to improve their grammar and broaden their vocabulary. As such is more of a special purposes software programme and not used by all students in this study.

Virtualilc is an Internet based site combining authentic news items, visuals, audiovisuals and text available simultaneously to students of elementary through to advanced English levels. It also includes listening comprehension, spelling, pronunciation and grammar in a programme called Journeys into English which includes stories of seven people learning English in Australia.

Decade software was initially designed and developed by teaching staff from the Auckland University of Technology using text and visuals where students interact requiring a range of responses e.g. gap filling, yes/no and multiple choice answers. Feedback and help facilities are included. However Decade and Wida only run on Macintosh computers and are used by fewer students because only a small number of classes use this laboratory. Wida is an authoring programme and many texts have been written by our university staff specifically for our programmes, using Choicemaster, Storyboard and Gapmaster.

The selection criteria for the software evaluation was developed using ideas from the instructional design section of Lee, (2001). The results of the software evaluation indicated Issues in English to be the easiest to use, the most helpful, best at giving feedback and the most enjoyable. Tense Buster was the next choice closely followed by Study Skills Success and then Virtualilc, Decade and lastly Wida. Virtualilc.com, the internet based site, was second in the most enjoyable category after Issues in English.

Listening via the computer in preference to listening in the language laboratory was mentioned by four of the interviewed students. Student comments on preferring the computer room related to student choice issues whereas in the language laboratory all students listened to the same tape; to technology problems in the language laboratory because the teacher is not always ready and time is wasted; to language laboratory tapes are sometimes too fast, and finally that in the computer room you can see the text as well as listen to it. Two students said the computer room and language laboratory were equally useful for listening and the remaining six students either did not use the language laboratory or did not do listening in the computer room and therefore could not comment.

Issues in English in particular was commented on by students as offering good listening practice. Many designers of CALL programmes show awareness of the need for skills integration and the popularity of Issues in English may be accounted for because at every level of every issue (Smoking, Environment, Growing Old etc.) there is a video clip of a person presenting some information or their opinion about the issue. All of the exercises including reading, writing, spelling, listening, grammar, vocabulary and pronunciation are based on one of the 32 video clips.

Learning Styles and Teacher Input

The findings have shown that a large number of our students are interested in computers. Nevertheless, there are individuals who do not take to the computer as a tool for learning a language. Just one or two such individuals in a class raise an awkward dilemma for the teacher, who can set out the objectives of the lesson, but cannot make students learn by this medium (Jones, 2003). Although the overwhelming majority of students are likely to be interested in learning English by means of the computer, yet even among these students who are committed to CALL, it is possible that some will prefer the teacher-directed environment to the self-directed mode that proponents of autonomy favour (Jones, 2003). This is a dilemma in any learning mode given that people are different but with varied learning opportunities within a programme, student and teacher needs can be accommodated for at least part of the time.

Of the interviewed students, ten commented on teacher intervention. Five preferred independence with for example the comment, "I can get help from the teacher as I need it. Stopping class could be disruptive". Five students felt that some intervention by the teacher could be beneficial not necessarily for themselves but for other classmates. An example of this is the student who said, "In employment courses better to work individual time. Maybe if a student with a pronunciation problem or a grammar problem then teacher could work with those students". The comment from one student from China highlighted a possible indication of learning style with, "In China teachers always says you have to do. In New Zealand teacher always says you should do but I think you have to do is OK because it helps. I want teacher to tell me how much time to stay on each programme".

However of all the individual comments from the interviewed students this one comment from one of the interviewed students, "Different for different students", summed up the need for teachers to recognize the wide range of learning styles that make up our classes.

Conclusion

The findings from this study not only corroborate a number of those from earlier student attitudes towards CALL but also reveal several new insights into reasons for choosing CALL over some classroom-based activities. Like an earlier study by Ayres, 2000, the study found that 81% of respondents believe studying with computers improves their English. The study discussed possible differences in learning styles in accounting for the remaining 19%, of which 14% were neutral and 5% disagreed that CALL improves their English. About half of the interviewed students felt computer classes could be more teacher-directed either to assist them or some of their classmates and the other half preferred independence with the teacher there to answer questions as they arose.

The extent to which the findings of the study concerning software evaluation can be generalised to other populations needs to be handled with caution. This study stressed the fact that some of the software was used only by a small number of students and therefore the results are not generalizable. However the numbers of students using Study Skills Success, Tense Buster, Virtualile and Issues in English were similar and so the findings here are significant for this study. In this study Issues in English proved most popular with students and suggested reasons for this were the integration of numerous skills plus the link to a topic or issue of interest to adults. Other factors such as length of time on each programme, and differences in English level and teaching methods could produce different results for other institutions. A further limitation to the study is on deciding whether student answers to the questionnaire are based on current computer laboratory classes, past experiences or a perception of what computers may be able to do. This could be a consideration for someone wanting to replicate this research study.

As a result of this research investigation, we can take another step towards improving our understanding of how students view CALL and how they approach the use of software packages for language learning. The field of CALL is highly eclectic in that it includes features of several different methods in language teaching such as by using both audiolingual (e.g. dialogues and drills) and communicative language teaching techniques (e.g. email). In order to maximise the chances of using CALL effectively, it is important to plan carefully how CALL will be integrated into the language curriculum. There are a number of factors to consider: the students, the teacher, the curriculum and the learning environment. According to Cunningham (2000), where there is good access to media and technology through libraries and computer laboratories, there is greater likelihood for success with an innovation like CALL. Regular use of the computer programmes was also highlighted in this study.

This research project has proven that the majority of the students in this study are interested in CALL. CALL has not moved off the main agenda for our English language students and with the introduction of the many innovative communication tools now available, the potential for CALL to assist students with English language skills is increasing. However is this potential being met by teachers? In order to maximise the benefits from CALL, students require training and the trainers should be the language teachers, (Jones, 2001b).

However Jones asks the question, "Are they ready and qualified to do the job?" While the focus of this study was on the students, further investigation is required as to the role of the teacher in CALL.

Note: A copy of the questionnaire used in this study is available from helen.cartner@aut.ac.nz

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References

- Ayres, R. (2000). Student Attitudes to the use of CALL in their classrooms. Paper presented at the CLESOL Conference, Auckland. New Zealand.
- Corder, D.M. (2002). The QTKanji Project. A thesis presented in partial fulfillment of the requirements for the degree of Master of Arts in Japanese, Massey University, Palmerston North, New Zealand.
- Cunningham, K.(2000). Integrating CALL into the Writing Curriculum. Retrieved 9/8/00 from <http://www.aitech.ac.jp/~Articles/Cunningham-CALLWriting/>
- Hatasa, K. & Hatasa, Y. (1997). A vocabulary Kanji conjunction exercise in Japanese: the development and evaluation of VKC/2.0. On-Call, 11, 2-11.
- Hoven, D. (2003). What learners Use and How they React. Australian Review of Applied Linguistics, 17, 125-147.
- Johnson, M. (2004). Online web tools for international education. Paper presented at the ALANZ Symposium, Palmerston North, New Zealand.
- Jones, J. F. (2001a). CALL and the responsibilities of teachers and administrators. ELT Journal, 55,4, 360-367.
- Jones, J. F. (2001b). CALL and the Teacher's Role in Promoting Learner Autonomy. Retrieved 8/12/03 from <http://www.clec.ritsumei.ac.jp/english/callejonline/c-1/jones.html>
- Jones, J. F. Technology and autonomy: a word of caution. Retrieved 8/12/03 from <http://www.miyazaki-mu.ac.jp/~hnicoll/>
- Kaufmann, H. (1992). Computers A resource for teaching literacy in the AMEP: AMES, Victoria, Australia.
- Lee, K. C. (2001). Selecting & Integrating CALL software programs into the EFL classroom. Paper presented at the ITMELT Conference, Hong Kong.

- Levy, M. (1997). *Computer-Assisted Language Learning: Context and Conceptualization*. Oxford: Clarendon Press.
- Levy, M. (2004). Integrating CALL into the Curriculum: Old Problem-Seeking New Solutions. Paper presented at the Technology Futures and Language Education Symposium, Auckland, New Zealand.
- Pennington, M. (2001). Innovation & Synergy in IT and English Language Teaching. Paper presented at the ITMELT Conference, Hong Kong.
- Pennington, M. (2004). Cycles of Innovation in the Adoption of Information Technology: A View for Language Teaching. *Computer Assisted Language Learning*. 17,1,7-33.
- Stepp-Greany, J. (2002). Perceptions on Language Learning in a Technological Environment: Implications for the New Millennium. *Language Learning & Technology*, 6, 165-180.
- Stevens, V. (1992). Humanism and CALL: A coming of age. In *Computers in Applied Linguistics*. M. Pennington (Ed.), 11-38. Clevedon: Multilingual Matters.
- Warschauer, M. (1996). Computer-assisted language learning: An introduction. In *Multimedia Language Teaching*. S. Fotos (Ed.), 3-20. Tokyo: Logos International.
- Warschauer, M. (2000). The changing global economy and the future of English teaching. *TESOL Quarterly*, 34, 511-535.
- Ybarra, R., & Green, T. (2003). Using Technology to Help ESL/EFL Students Develop Language Skills. Retrieved 4/05/04 from <http://iteslj.org/Articles/Ybarra-Technology.html>