



European Association for Computer-Assisted Language Learning

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ReCALL Journal

From 2007, *ReCALL* is published three times a year, in January, May and September. The forthcoming issue of *ReCALL* (Vol. 19, Part 3), which is a *Special issue on Integrating Corpora in Language Learning and Teaching*, will be distributed to EUROCALL members in October/November 2007. Please send articles, software reviews, details of relevant events or other items of interest for future issues to June Thompson, Editor *ReCALL* d.j.thompson@hull.ac.uk

The journal contents are listed at:

http://www.eurocall-languages.org/recall/r_contents.html

All articles are considered by an international panel of referees. Notes for contributors can be found at:

<http://www.eurocall-languages.org/recall/contribnotes.html>



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Software



Dominie & BonAccord

Two CALL Packages for Enquiring Minds

Faro Systems. Aberdeen, Scotland, UK (<http://www.farosystems.co.uk>)



It is a shortcoming of many, some would say most, CALL materials working in the tutorial paradigm that, having asked the learner a question or invited some other interaction, the system is only able to process a very limited range of responses. In many cases, there is only one right and acceptable answer, this Procrustean rigour being cushioned only slightly by some fuzzy matching routine. In fact, this shortcoming could well be the main reason why tutorial CALL has fallen into disfavour, since it has tended to corner our speciality into those not very interesting areas of linguistic structure and use where questions can be framed that have only one possible correct answer.

The two packages described here, **Dominie** and **BonAccord**, were designed from the start to present a viable way around this difficulty. **Dominie** is an EFL (English as a Foreign Language) package; **BonAccord** is designed for English-speaking learners of French. Both present the learners with a text to process. With **BonAccord** it is a text in English to be translated into French, a traditional style prose composition; with **Dominie** it is a set of skeleton sentences in English to be expanded and written out in full. In both cases the problem of processing relatively free input is solved in the same way. The solution lies in the design of the Knowledge Base, which is a type of extended systemic grammar in which can be fitted every acceptable variant of the sentence that the learner has been called upon to produce. The result is a flexible, semi-intelligent package, which learners can work through a number of times, trying out different solutions to the various problems presented.

In both **Dominie** and **BonAccord** the screen is divided into two parts, the upper containing the source text to process and the lower blank for learner input. The learner types, with **Dominie** a fully expanded version of each skeleton sentence, with **BonAccord** a translation of the source text into French.

In each case, if learners make any one of a large number of predictable language mistakes, they can, it is not obligatory, be sent to the carefully elaborated Help system which contains contextually relevant grammatical and lexical explanations carefully written in very simple non technical language.

At the end of a session the learner's version can be printed out to be given to a tutor for grading or discussion. A suggested version or fair copy can also be printed out.

Unlike most tutorial CALL materials both **Dominie** and **BonAccord** have been designed to cater for learners at a relatively advanced level of proficiency. Though both packages have been used, and found helpful, by learners at a more elementary level, they are intended and were designed, in the case of **Dominie**, for learners preparing for the Cambridge Certificate of Proficiency in English, and, in the case of **BonAccord**, for students entering university to study French.

Full information and a demonstration of both systems can be found at www.farosystems.co.uk. Unfortunately, for the time being, neither the demonstration nor the full version of either **Dominie** or **BonAccord** will work on a computer that is running Windows Vista.

DOMINIE

Dominie consists of twenty Guided Writing exercises in English as a Foreign Language, most of them letters, covering a range of different sorts of language: (Informing, Requesting, Complaining etc.). About half of these are letters and memos covering standard commercial situations, job applications, complaints about poor service etc. The others are more personal and include a set of letters from a student arranging an au pair job with an eccentric Scottish family. In each exercise, the learners are presented with a set of specially designed skeleton sentences called "Sentence Frames" and are asked to expand them, typing each one out as a complete sentence. Thanks to the design of the programme there are very many acceptable possibilities.

Obviously, at this level, the meaning of even the simplest sentence can be expressed in very many ways, all of them correct, or at least acceptable. Our aim in designing **Dominie** has been to produce a system that is able to process, not only any version that a student at this level might reasonably be expected to know, but also any mistake that such a student is liable to make, and, in addition, whatever more sophisticated or more idiomatic renderings it would be useful for such a student to learn. **Dominie** will also check things like capitalisation and punctuation.

Here are two "Sentence Frames" and some possible acceptable learner inputs, although there are of course vary many more.

yesterday / I write / apologise / my mistake.

*Yesterday I wrote to apologise for my mistake.
I wrote yesterday to say I was sorry for the mistake I had made.
I sent a written apology for my mistake yesterday. Etc.*

appreciate / reply / immediate.

*I should appreciate an immediate reply.
We would appreciate it if you would reply immediately.
A prompt reply would be appreciated.
We should like it if you could let us have an answer as soon as possible. Etc.*

The data that compose the Knowledge Base of **Dominie** have been compiled on the basis of paper exercises done by a large number of students, native speakers of all major European languages.

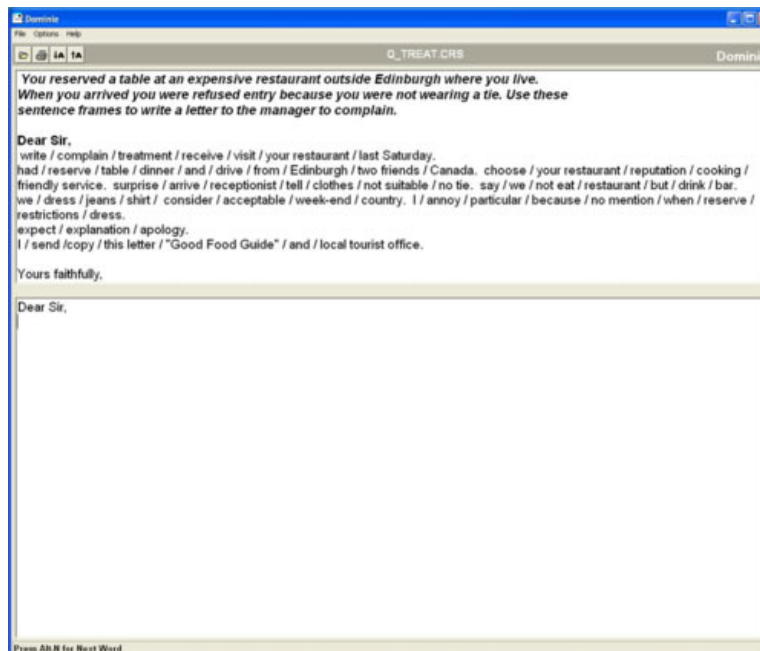


Fig. 1 A sample **Dominie** activity.

BONACCORD

BonAccord consists of fourteen passages in English to be translated into French. Most of the passages have figured in public or University examinations in Scotland. The standard of difficulty is approximately that of English A-level or British University first year. There is one easier and one much more difficult passage.

As everyone knows, a sentence, any sentence, can be translated in a multiplicity of different ways, all of them to some degree acceptable, and this applies even to the simplest of sentences, in fact, it applies more to apparently simple sentences than to more complex technical ones. The idea behind **BonAccord** was to produce a piece of software that would exercise a learner's translating skills by taking full account of this fact. To achieve this aim the Knowledge Base contains, for every sentence in every passage, not only all the variants proposed by several hundred students but also those suggested by a number of a native speakers of French, all of them language specialists. It also contains all the productive language mistakes made by the students, understanding by the word "productive" those mistakes from which something useful may be learnt. Each of these triggers a Comment or Explanation from the Help system in which, as explained above, grammatical and lexical explanations are framed in very simple language, even the most obvious

grammatical terms being explained. **BonAccord** has been designed specifically with those students in mind who have had little formal training in grammar.

Two points specific to French should be noted. The first concerns punctuation. As with **Dominie**, the program is sensitive to punctuation marks, and will require the input text to be correctly punctuated. In the case of **BonAccord** it will draw attention to some of the ways in which the punctuation of French is different from that of English, in particular as regards the punctuation of dialogue.

As regards style, the variety of the language adopted for all recommended variants is that of standard written French, *style soutenu*. In dialogue passages, the use of the second person singular is only accepted where *vous* would be clearly wrong. Also, though most of the passages could be correctly translated using the *Passé Composé*, since the system is designed first of all to teach written French and for potential university students, the Past Historic tense is required for all narrative verbs except where there is a clear indication that it would not be right.

As in the case of **Dominie**, the data files composing the Knowledge Base are based on the analysis of the written work of several hundred university students.

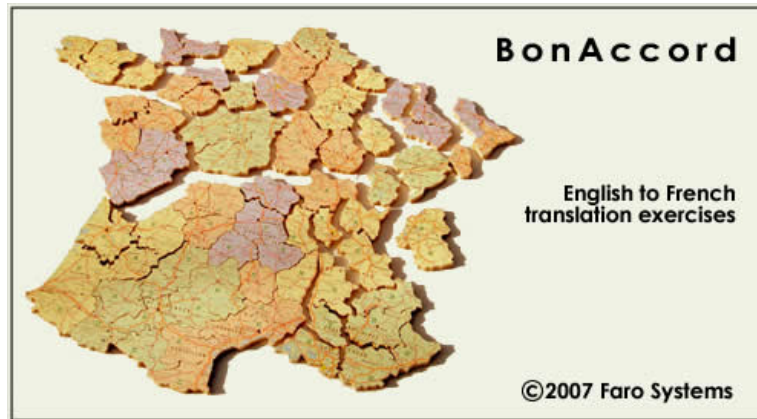


Fig. 2 **BonAccord** English to French translation exercises.

WORKING WITH DOMINIE OR BONACCORD

USING "NEXT" (Alt+N)

Since, with both packages, the system "knows" at any moment what the possible next words are, a learner can be shown them by pressing Alt+N. At first sight, this would seem to make the exercise too easy but the opposite is usually the case, since Next may suggest versions that are more idiomatic, or simply more typical of a native speaker's style than the learner could produce unaided. Next also makes it possible to work through the exercise in several thought-provoking ways as described below.

Since there is no single procedure that must be followed, either system can be used in a range of different teaching/learning situations. It can be made available to pupils or students for self-access learning, or operated by the teacher for classroom, "clever blackboard", teaching. In both situations it can be treated either as a straightforward tutorial system, or as an instrument for exploratory or conjectural learning.

The large number of variant renderings for every word, every phrase, every sentence contained in each Knowledge Base, and the way in which they are made available to the learners, makes the system into something very much more flexible than a mere tutorial device. What we have in each case here is in fact not so much a tutorial system as a rich resource that can be said to provide, at one and the same time, both instruction *about* the language and aid in the learning *of* it. The former, instruction, learning *about* the language, comes from the Comments and Explanations called up when the learner makes one of a number of predictable mistakes. Learning the language itself is a more complex and subtler process, and happens when a learner, interrogating the Knowledge Base sees words, turns of phrase, pieces of syntax, not to mention ways of structuring a sentence as a whole, which s/he can recognise, but which s/he could not have produced unaided. Working through one of these exercises thus gives the learner the possibility of making such expressions her/his own. Since everyone's receptive competence embraces a very much wider range of linguistic phenomena than figures in their active performance, in other words since we can all understand a lot more language than we can normally produce, an important part of the learning process consists quite simply in transferring knowledge from receptive to productive competence. This is how **Dominie** and **BonAccord** teach, or, more precisely, help the learner s to learn.

TUTORIAL MODE

Used as an instructional system, **Dominie** or **BonAccord** gives learners the advantage of having their work corrected while it is being done. There are several ways of working. Students can come to the system completely unprepared, and puzzle their way through the exercise at the keyboard. Or they can be asked to produce a first draft before the session, on paper. Whichever way is preferred, work with the machine is the same: the prompt is treated as a question which is then answered by the proffered version; the source for these answers can be the students' rough drafts, or, in a live session, their productive knowledge of English or French.

INVESTIGATIVE LEARNING

Dominie and **BonAccord** are, obviously, both tutorial systems, of a kind. They work, however, by turning the conventional tutorial situation upside down, or inside out, depending which metaphor one prefers. In a conventional tutorial mode program, the system will ask the learner a question, and then proceed to process the response. It will be primed to expect one or two "correct" answers, and, if it is any good, it will also be programmed to respond to a certain number of predicted wrong answers. With **Dominie** and **BonAccord**, similarly, a certain number of predicted wrong answers have been built into the Knowledge Base. However, here the number of possible *acceptable* answers is theoretically unlimited, and in practice very large, so large in fact that the student can be encouraged to consult them freely while working through the passage. And the implicit point is made all through the exercise that there is no one "right" answer, or even "best" version.

For this reason, with both **Dominie** and **BonAccord** the system can be used as an instrument for exploratory, investigative, learning. The way this works is as follows. As the learner builds up a text on the screen the program follows a pathway through the Knowledge Base. Clearly, at any point in the pathway there will be a choice of possible next words, and the program's pointers must constantly have these in readiness. The number of these next words varies constantly, from one or two to twenty or more. At a touch of a key, and at any point in a sentence, the list of these possible next words can be displayed for the learner to choose from. If the Base is interrogated in this way at the very start of a sentence the system may suggest a multiplicity of different ways of phrasing a sentence, many of which will probably not have occurred to even the brightest student. Of course not all combinations of words and phrases displayed in this way will be models of stylistic elegance, but they will all be correct English; it will be for the student to choose between them.

Students are sometimes reluctant to make use of the Next option, partly because it feels like cheating, and partly because not using it gives an impression of freedom of choice. However, the evidence suggests that doing an exercise in this way, making frequent use of Next and backspacing, is a very challenging activity, and more rewarding than simply using the system to correct one's mistakes. In practice we have found that most learners like to try out their own ideas first, interrogating the Knowledge Base from time to time, whenever they get bogged down or whenever their curiosity is aroused

regarding other ways of phrasing or expressing a meaning.

"TRIANGULAR MODE" WORKING

Though **Dominie** lends itself to private study by a student working alone and unaided, this is not the best way to use it. For that reason the presence of a teacher is implicit in the design of the software. **Dominie**, in fact, is particularly well suited to what might be called "triangular mode" working, the three points of the triangle being computer, teacher and students, and the computer being seen, not as a teaching machine, but as an intelligent blackboard. There are several advantages to this type of CALL. The most obvious one is economy, since only one computer is needed for a small group of students, though, it is true, a good sized monitor screen is required if everyone is to be able to see. The second advantage is flexibility, since the teacher can control presentation of the CALL material, choosing the points to be emphasised and those to be skimmed over. Finally, there is a psychological advantage, since working in this way puts the teacher on the students' side "against" the machine.

Triangular mode working, however, is not limited to using the computer as a clever blackboard. Any way of working in which the system is used as a resource, the CALL work being integrated in the programme of classwork, and the teacher involved actively, is triangular in this sense. For example, the method favoured by most teachers piloting the earlier versions of the system, has been to require the students to bring to class compositions which they have prepared with the aid of **Dominie** or **BonAccord**. Written work done in this way can be corrected and graded, or can be the object of discussion in class. Marking students' work which has been prepared in this manner is far less irksome for the teacher than the usual weekly *convée*, since all obvious and mechanical errors will have been dealt with by the system, and, freed from the conventional role of glorified proof-corrector, s/he can give proper attention to the more interesting, and more challenging, parts of the exercise.

WHAT DOMINIE AND BONACCORD DO NOT DO?

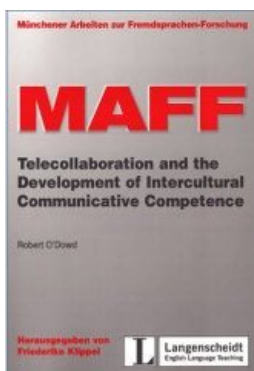
This software does not impose one "fair copy" or perfect master copy: the Knowledge Bases contain many thousands, in some cases many millions, of possible acceptable renderings, some better than others. Though it will filter out all positive mistakes, the program does not pretend to choose between the versions that a learner may propose, that is left for the teacher to do. The suggested version that the system can be asked to print out is only one of a number of possible acceptable versions, and we do not presume that all or even most teachers will always agree. Also, since the program automatically links together the results of constructing a series of expressions, it is possible for the system to pass a sentence which, while it contains no formal mistakes, may leave much to be desired as regards clarity of expression or stylistic elegance. Here again it is for the teacher and not the computer to have the last word.

Brian Farrington
University of Aberdeen, UK

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Book Review

Telecollaboration and the Development of Intercultural Communicative Competence



Robert O'Dowd (2006)

Telecollaboration and the Development of Intercultural Communicative Competence

Published by Langenscheidt ELT GmbH, München

ISBN: 3526508356 (248 p.)

This book explores how telecollaboration and other forms of Network-based Language Teaching (NBLT) can contribute to the development of intercultural communicative competence (ICC) and to culture learning in university foreign language learners.

The term 'telecollaboration' refers to the use of on-line communication tools such as e-mail, videoconferencing, message boards "to connect language learners in different countries for the development of collaborative project work and intercultural exchange" (p. 9), while 'ICC' is defined as "the ability to interact effectively in a foreign language with members of cultures different to our own" (p. 9). Thus, O'Dowd deals with a number of useful and growing areas of activity for teachers of languages or communication.

The book was originally written as a PhD thesis and this seems to me to be its main failing. As a doctoral thesis, the study (as O'Dowd refers to it) may have been very good, but as a book – and therefore aimed at a completely different audience and having a different purpose – it would have been more effective and more readable had either the author or the editors shown more consideration towards potential readers. In fact, it is probably the publishing company (Langenscheidt) who are at fault here; they, I believe, should have made more effort to identify a market and ensure the final product was appropriate to it.

This is a great pity, because throughout the book O'Dowd makes many pertinent and useful observations and the discussion in the first two Chapters, though somewhat stodgy at times, is enlightening.

The book is divided into seven Chapters. The first, entitled 'Culture in Foreign Language Education' examines three main issues; (i) How the role of culture in foreign language learning has changed over the past few decades and the emergence of the so-called 'intercultural speaker'; (ii) What the terms *intercultural learning* and *intercultural communicative competence* refer to, including the learning objectives they may entail and some of the practical consequences they may have for foreign language teaching and learning; (iii) How intercultural communicative competence is being developed in foreign language education. In this section O'Dowd reviews the role of textbooks and other traditional sources of culture learning materials and then explores some of the practical applications, in an on-line context, of adopting an approach to teaching which has the development of ICC as its central aim.

In Chapter 2 O'Dowd investigates two interrelated issues. The first is how the cultural dimension of foreign language learning has been represented up to now in CALL materials and in Network-Based Language Teaching. In the second, he identifies some of the characteristics of on-line technologies (such as the fact that they encourage interaction and reflection, allow more equal levels of participation, enable the learner to engage in authentic communication, facilitate the collaborative construction of knowledge or facilitate contact with the target culture) and explores how telecollaboration can contribute to achieving the goals of intercultural language learning. On the way he discusses some aspects of what skills and knowledge learners will need in order to develop their intercultural competence on-line.

As mentioned above, this book was "originally written as a Ph.D.thesis" (p. 3) and in Chapter 3 O'Dowd states the main research question which he was

interested in; namely, "In what ways can Network-Based Language Teaching, and in particular telecollaboration, contribute to the development of learners' ICC?". As he points out (p.98) this implies many related questions. The ones he mentions are:

1. What should the role of the teacher be in order to support intercultural learning in the networked classroom?
2. Do different communication tools support the development of ICC in different ways?
3. Are there particular characteristics in on-line cultural relationships between learners which particularly support the development of intercultural understanding?

He also describes the research methods used in the study and the methods of data collection; a section which anyone considering carrying out qualitative classroom action research will find interesting.

These issues are then discussed in Chapters 4-6, each of which describes a different case study exploring how different combinations of on-line technologies can contribute to the development of learners' ICC. The study in Chapter 4 was carried out in the context of a general foreign language course and focusses on e-mail and web-based intercultural exchanges between two groups of university students in Germany and the USA. The approach reported in Chapter 5 used students from the same German university as in the previous study, but this time the focus was on how a web-based course and an on-line discussion forum (message board) with Irish students was used to support a specialised course in Irish Cultural Studies. The third case study, reported in Chapter 6, again used students from the same German university on an advanced language course who engaged in ethnographic interviews (the techniques of ethnographic interviewing were taught previously) with North American university students through e-mail and videoconferencing exchanges.

These three Chapters are structured in more or less similar ways: they provide an introduction to the technologies employed, give some background on the particular project, describe how the exchanges were set up and present the research findings, and it is in these Chapters that the book suffers most from an excessive number of unnecessary and tedious details of how the author carried out his research. The two short examples I give here (from Chapters 4 and 6) are from his descriptions of how he set up the on-line exchanges:

In the week from the 18 until the 26 January students in both classes were given the URL of the on-line questionnaire and asked to complete it in their mother tongue. The results were then compiled by the technical staff at the University of Michigan and placed on-line on the 28 January ... (p.134).

Sheida's class in Communication Studies was made up of 21 American students and was due to run from 31 March until 7 June 2003. The class was to meet twice a week. My class of advanced EFL learners (Integrated Language Course) had 25 learners and our term was to last from 14 April until 29 July 2003 ... (p.195).

My other main complaints, now that we have touched on them, include the fact that although O'Dowd several times mentions the questionnaires he gives to his students and discusses the results, we never get to see examples of them ourselves. Their omission renders the results and corresponding discussions less meaningful. Secondly, as O'Dowd himself points out, the research for the book was carried out in Germany. I have no problem with that, of course. What is irritating is that he has not supplied his non-German reading readers with translations of the relatively lengthy quotes from German writers (those on pages 35, 36 and 185, for example). There is even a definition of intercultural competence (on p. 13) which is not translated (and incidentally, I could not find the reference given in the Bibliography. Not that I checked all the references, but in this case I wanted to go to the original source to see if I could find an English version). Were these instances individual words or proper names one could, I suppose, use a dictionary, unfortunately they are not, and the paraphrases which I assume O'Dowd provides us with are not satisfying enough. Nor does he need to justify his research approach or try to convince the general reader of the value of the work quite so blatantly.

Despite these negative comments I would like to end on a positive note. There is much of interest in this book and in the final Chapter (Chapter 7) O'Dowd presents his conclusions about what teachers and students need to know and to do in order to fully benefit from these sorts of on-line activities. In these pages he reviews how on-line intercultural exchanges (better known today as telecollaboration), can contribute to culture learning and the development of intercultural communicative competence (ICC) in the foreign language classroom. Learning about the foreign culture and becoming more aware of one's own culture are possible outcomes of on-line exchanges, but this is not necessarily the case. Indeed, the evidence in a large number of reports reviewed suggests that many learners engaged in such activities actually confirm their stereotypes and fail to establish good working relationships with their partners.

David Perry
Universidad Politécnica de Valencia, Spain

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Recommended website

Inspiration Lane

<http://www.inspirationlane.blogspot.com>

Fig. 1 "Inspiration Lane" homepage.

"Inspiration Lane" is an online, classroom magazine for all levels of ESOL, ESL and EFL classes. It is not just another blog; its content *changes automatically on a daily basis*. Created and edited by Susan Alyn, an ESOL certified teacher in Florida, USA, the site is intended for teachers to use after the day's lesson, by projecting it onto an interactive whiteboard. The daily readings and interactive language activities provide a free, fun and encouraging experience for students learning English - especially during those last minutes of class time.

A few months ago, Susan Alyn read an archived news article about a college now being sued because teachers dismissed students from their classes too early. Having taught in a local private college where her adult ESOL (English for Speakers of Other Languages) students looked forward to the last few minutes of class — as that's when she took them to visit different web sites – this Florida teacher decided to create a free online classroom magazine to help other ESOL teachers, by providing them with a meaningful way to utilize every minute of class time with students.

With only limited skills on how to build a web site, Alyn decided to just stick with the standard blog format available from a site popular with bloggers. She researched online to find suitable content to add to her own ideas for this magazine, and was delighted to learn of a company with free content that automatically changes each day, as this aligned with her goals for the new magazine. The result was InspirationLane.blogspot.com.

"Teachers often feel overwhelmed with demands being made on them in today's world of education, and teaching English to non-English speaking students is very challenging," says Alyn. "Teachers in classrooms with SMART boards or computer stations have additional needs for classroom resources that are online and offer new content daily."

Although technically simple by many standards, Alyn's innovative idea and online classroom magazine web site caught the attention of Texas State University, home to CALICO, the US-based international consortium of professionals involved in education and technology, as well as that of many EFL teachers worldwide seeking inspiration for their classes through the many inspiring activities, exercises, quizzes etc. suggested on the site. Alyn's new web site has already received hits from countries as far away as China and Thailand, as well as from colleges all over the USA.

"The e-mails from teachers have been very positive," said Alyn, who uses a Blogger screen name on the site. "If ESOL teachers in high school and college actually use this new site, and find it to be a big help to them in the classroom, then, my job is done!" Well, not quite done, as Alyn edits the new online magazine monthly for certain sections.

Article

New technologies as tools to support maritime technical english teaching – A revision of current use

Abstract: The new information and communications technologies must become a standard tool in supporting language teaching within the context of the university. The use of such technology was not widely accepted until very recently. This was probably due to, among other factors, the lack of available equipment in centres as well as the lack of expertise in operating such equipment on behalf of the instructor. The initial reluctance by language teachers in general, and maritime English teaching in particular, to incorporate the new technologies into their teaching and learning methodologies has been overcome, as there are signs of significant improvement and innovation in adapting to these new teaching tools. This article presents an overview of the ways in which maritime English teaching is currently adapting to the new teaching context of ICT, computer labs, and simulations, taking into consideration their need to provide instruction through a common language in order to improve the quality, safety and security of maritime operations.

Keywords: ICT, maritime English teaching, communicative language teaching, e-learning, simulations, teaching-learning process.

1. Introduction

The international nature of maritime trade places new demands on several countries to be in greater touch with each other. Hence the necessity of a common language has arisen to deal with these new demands. This common language has to be learnt at a high level of fluency so that interpersonal communication between individuals with different mother tongues guarantees the efficiency of maritime communications for obvious reasons of safety and protection of property. This common language, or *lingua franca* within the maritime framework, is the English language, as decided by the International Maritime Organization (IMO). Indeed, the IMO has made a great intellectual effort in the standardisation of maritime vocabulary leading to the recent approval and publication of the "Standard Marine Communication Phrases". Moreover, the IMO has established a minimum level of skill and knowledge of English in use. This minimum is included in the training code, "Seafarers Training, Certification and Watchkeeping Code 1978/95"; whereby this code establishes that the member governments are responsible for the seafarer's acquisition of the minimum level of English.

Complicating the linguistic issues above is the general decline in interest in seafaring, which has led, at least in some countries, to a shortage of national officers on ships flying their national flag and a shortage of ex-ship officers for positions in the shore-based national maritime industry for which shipboard experience is essential if not desirable. This means that, with the purpose of meeting the requirements of personnel with adequate maritime experience to hold such working posts in shore-based industry, it is necessary to further promote the mobility of seafarers among several countries (Zade, Carbajosa, & Pourzanjani, 2002). The success of such mobility depends not only on the compliance of certain regulatory and administrative requirements, but also on the seafarer's linguistic skills. It is in this light that the METHAR Project has asserted that, "the remaining prohibiting factor to more mobility is limited proficiency in foreign languages" (European Commission, 2002: 31). It seems obvious that the non-English speaking countries are faced with a greater challenge, namely that of establishing methodologies and developing materials that improve the efficiency of language teaching and the learning process. Together with traditional means such as textbook and blackboard, maritime English teachers must become aware of the benefits that new information and communications technologies provide language teaching, and, furthermore, they must take advantage of these means for themselves and for their students. But they must also take into account that those technologies have unique properties that must be applied to the teaching context using the appropriate methodologies. The methodological implications of incorporating ICT in foreign language teaching will now be discussed.

2. Computer-assisted language learning

Many authors agree that computers in education have made considerable inroads into the learning environment of students and foreign language teaching in particular, thus creating a new means of knowledge acquisition. By using computers students can develop their own ideas and apply their knowledge with more self-confidence (Gallego & Alonso, 1999). Generally speaking there are two main ways of looking at utilising computers for language teaching and learning: "computer as tutor" or "computer as tool". The essential difference between them is that the first assesses student's answers, while the second does not (Taylor, 1980). We could add to this that the use of computers as a tutor is more common in self-paced learning situations, and its use as a tool is more common in ordinary and distance education contexts. Lewy (1997) builds upon Taylor's original somewhat simplistic definition by exploring the methodological implications of the tutor-tool framework by arguing that the computer as tutor role essentially provides content for the user that operates on the assumption of substitution if not replacement of the teacher role. Intelligent Tutor systems are an example of this function for computers. The tool role of computers is very complex because it relocates the teacher/student role of the traditional classroom, and as such, maintains that the control over content, the uses of the computer, the precise tools, etc. are of primary pedagogical concern. The computer is merely the medium through which the content passes.

Regardless of the purpose, several authors (Assel, 1995, Cantos, 1995, Ruipérez, 1995) agree that the motivational factor is the main advantage of computer use for language learning and teaching. As a result students spend more time doing the exercises, if these are interactive, and the student's active participation on the proposed task is consequently greater. In addition, the use of computers in language teaching offers other advantages:

- It promotes individualised and self-paced learning processes.
- It can give more or less immediate feedback in the results of simple language exercises; it keeps the students' "score", as for example, the kinds of language tasks normally associated with programmes like "Hot Potatoes" or "Quiz Faber."
- It permits access to information in a non-sequential way, thus adapting to students' needs.
- It provides the possibility to create and bring into operation new kinds of tasks, using multimedia and hypermedia tools
- It allows the student to assess his/her skill development and learning style because it doesn't require an immediate response to the tasks.
- It offers the possibility to record, store and play audio/video information, thus providing a lot of advantages for oral communication.

But the advantages are not only for students; teachers can also benefit from using these tools in the following ways (Assel, 1995, Cantos, 1995, Ruipérez, 1995):

- Open programmes, unlike books, can be modified and extended.
- Computers can be used together with other technological media such as videos, DVDs, tape cassettes and CDs.
- Mechanical tasks are less necessary during classroom time so that the teacher can focus on more communicative language tasks.
- The exercises done by students can be printed or reported on at the end of each lesson. Sophisticated tracking programmes and "logs" enable the teacher to monitor his/her students' progress more easily in an ongoing manner.

Finally, with regard to language teaching in maritime education institutions, particularly maritime English, it is interesting to point out that due to the international nature of maritime trade and the multicultural and multilingual nature of its crews, safety and communication have a close relationship in this setting. For this reason it seems very important to place emphasis on teaching the communicative aspects of language. Following the views expressed in current theories of language teaching in general, and on the "Information and Communications Technologies for Language Teachers" website in particular, it can be said, and this is equally true of maritime English, that "communication is at the heart of language teaching and learning".

3. Information and communications technologies and maritime English teaching

Technology use has become almost a synonym for progress in both shipping and maritime education and training. In fact, echoing the sentiments of the METHAR Project, institutions with advanced simulators and modern information technology equipment can offer their students more effective training, closer to shipboard reality, than those institutions which lack access to this technology. Along the same line Pardo, Muirhead & Prasad (2002) indicate that teaching methodologies used in maritime education institutions have experienced two substantial changes over the past fifty years. The first of them is the introduction of simulators as a teaching tool, and the second is the development and application of new information and communications technologies. These authors point out that such changes require that maritime education institutions update their study programmes, adapt their teaching strategies and renew their core materials with the aim of providing students with adequate knowledge as required for technological advances in the maritime industry. As a consequence of all these advancements, and this has been very much the case with maritime English, up-to-date teaching materials are somewhat scarce or simply don't exist. In this case the teacher must create his/her own materials, in keeping with the specific needs of the target language.

It is also important to take into account that the teacher needs to receive specific training to use these technologies in the classroom. The lack of such training, along with the high cost of computer equipment and maintenance of that equipment, coupled with the technophobia of some teachers, often hinders the establishment of computer assisted language learning (Assel, 1995, Cantos, 1995, Ruipérez, 1995). On the other hand, although initial responsibility for knowledge transmission falls upon maritime education institutions, it must be remembered that seamen's training does not conclude upon graduation, but continues throughout their professional life. In that case, new information technologies become a basic tool which permit seamen to continue their training on board, to extend their knowledge, or to update what they have learnt in the past. This kind of training that improves seamen's linguistic capacities is, in addition, very interesting for the maritime industry because, as Hesham points out, "the maritime industry needs to find ways to train seafarers in maritime skills quickly and cheaply, either onboard vessels, or over the internet while they are at home, which can be cheaper than taking them off vessel to spend time in Maritime education and training institutions" (Hesham, 2003).

4. Practical computer use in maritime English teaching

When in 1997, and on occasion of the development of the MARCOM Project [1] (European Commission, 1999), maritime English teachers were asked to comment on their use of technological aids for language teaching, most of them had little to say, or merely mentioned the occasional use of audio or videotapes. Some, as the report indicates, acknowledged using the English language laboratory with audiotapes, but unfortunately, as they stated in the survey, the laboratory was usually antiquated and seldom working properly.

There are two main kinds of teaching contents based on new information and communications technologies: those that complement classroom teaching and those that are used as an out-of-class aid to provide the student with alternative information. The latter has the advantage of allowing unlimited teaching in relation to time, day of the week or distance. Further classification leads us to distinguish between synchronous media, where teacher and

students communicate on a simultaneous basis but in different locations (videoconferencing, and chat) and asynchronous media, where teacher and students communicate in a continuous way but are not necessarily connected to each other at the same time (forums, e-mail, newsgroups, non-synchronous chats for example).

The next section aims to describe the changes that have occurred since and in response to the initial 1997 report, through the description of several projects, initiatives and proposals of various maritime training institutions in relation to the use of new information and communications technologies to improve maritime English teaching. Therefore, and in accordance with our previous classification, we are going to divide this section into two main parts: the first one is devoted to examining the use of new technologies in the classroom, studying the applications of computer labs and simulators to the maritime English language teaching-learning process, and the second is devoted to maritime English electronic learning or "e-learning".

4.1 New technologies in the maritime English classroom

4.1.1 The Computer Lab and the Digital Language Lab

As indicated in the MARCOM Project a number of terms are in use to refer to a centre that brings together many technologies to assist students with their language learning: multimedia centre, language laboratory, media centre or multimedia language learning centre. We are going to use the terms "computer labs" or "digital language labs" to refer to the computer networks dedicated to language learning and equipped with multimedia aids. The word "multimedia" refers to the combination of texts, audio, and pictures on a single platform which combines the benefits of conventional computer-assisted language learning – text reconstruction, exercises, tests, games, etc. with those of video and other technologically-based devices.

The language computer lab is currently perhaps one of the most widespread tools for foreign-language teaching. However, we have found little reference to its usefulness in the specific teaching of maritime English, and as Table 1 shows, where the results of a survey conducted with over 70 Maritime Education and Training institutions (MET) from 59 different countries are reflected, in spite of the fact that 66 per cent of these institutions stated having laboratories of this kind, only 7% of them confirmed using it for language-learning activities. Language labs, which consist basically of a personal computer local network managed from the teacher's position, used for foreign language teaching and equipped with recording and audio tape devices, can be mainly used with three kinds of materials: multimedia CD-ROMs specifically developed for maritime English teaching, or developed by the teacher with the aim of covering some specific issues; software designed to be used in these laboratories but have to be programmed by the teacher to create specific exercises – generally useful for audio training and speaking skills; and the use of materials obtained from the internet to develop exercises designed beforehand by the teacher.

	This teaching aid exists in the institution	This teaching aid is used to m.e. teaching
Computer labs and computer for classroom use	66%	7%
CD-ROM	39%	8%
Internet	58%	?
GMDSS equipment and/or simulator	70%	19%

Table 1. The Availability and Use of New Technologies (MARCOM Project).

4.1.1.1 Multimedia CD-ROMs. According to Pritchard, these kinds of materials could be used "to support a course by, for example, revising basic skills of language, to enhance a course by providing extra topics for the course; as free-standing material; and to provide data which can be exploited for language purposes" (Pritchard, 2004: 45). Some examples of these types of materials for maritime English teaching are:

- Maritime English. Maritime Education Sweden AB.
- Maritime communications. Maritime Education Sweden AB.
- Marlins Study Pack 1. Videotel and Seagull, London.
- Marlins Study Pack 2. Videotel and Seagull, London.
- The International Maritime Language Programme (IMLP), by P. van Kluijven, Rotterdam, The Netherlands.
- The Standard Marine Communication Phrases on CD-ROM. International Maritime Organisation, London.

4.1.1.2 Software applications. We can find two main kinds of software in a maritime English computer lab. Firstly, software designed to be used in language labs for training listening and speaking skills in general and which requires the development of specific exercises by the teacher. An example of this kind of software is the use of Lingus in Chalmers University of Technology (Sweden) (Carlson, 2005) and Wimba at Maine Maritime Academy (USA) (Fricke, 2003). The second kind of software is the one designed to assess the linguistic competence of maritime English students. The following are examples of this second kind of software that we can highlight:

- Marlins Study Pack 1, progress test. Videotel, London.
- Marlins Test of Spoken English (TOSE). Videotel, London.
- ISF Marlins Test. Marlins.

Lastly, we must make a special reference to Marine Training and Marine Language software: Standard Marine Communication Phrases and English Language Training by Marinesoft, specifically designed for maritime English teaching – grammar and pronunciation – that could be used for self-paced learning as well.

4.1.1.3 Websites. Web pages of several maritime institutions and organisations could be used as an information source for the development of exercises previously designed by the teacher. According to Pritchard (2004) we can find six different kinds of Internet information sources:

- Maritime Education and Training (MET) institutions websites, such as maritime universities, colleges, academies, maritime training centres, etc.
- Websites of international organizations in the maritime sector such as International Maritime Organisation or International Labour Organisation,
- Commercial software developers, for example Videotel, Seagull or Marlins.
- Individual websites developed by maritime English teachers such as the one maintained by Professor Van Kluijven (<http://home.planet.nl/~kluijven/>).
- Various pages on the websites of shipping and crewing companies.
- Individual websites run by former masters, maritime lexicographers, boat designers and other people with various interests in maritime trade.

The resources that can be obtained from these web pages are, amongst others, authentic texts, extracts from spoken language, phonology, grammar exercises, and language assessment and competence tests.

4.1.2 Use of simulators in maritime English teaching

Other applications of new technologies to the subject of maritime teaching and training are the use of simulators and the "virtual ship", the latter having been set in motion by the Warsash Maritime Institute. Angas (1999) points out the advantages of virtual reality use in maritime education and training when he states that "virtual reality will supplement simulation and increase the flexibility of transferring knowledge and skill by providing a dynamic and accurate picture of the internal structure of any particular building, ship or aeroplane". We have no news, at the moment, of experiences carried out using the "virtual ship". Nonetheless, there is an extensive variety of reports about the practical use of simulators in maritime English teaching, since, as Table 1 shows, this technological tool seems to be the most used from MET institutions with that aim in mind.

In maritime training domains, simulators are the equipment used with the purpose of creating the most realistic maritime environment according to the physical circumstances of the exercise to be executed. Barnet (1997) defines the simulator as "a device designed to satisfy specific objectives, which mimics part of a real situation in order to allow an operator to practice, and/or demonstrate competence in an operation in a controlled environment". The main characteristics of a simulator are, according to Barnet (1997), transfer and fidelity. The former refers to the degree in which learning in real environment is improved by previous learning on a simulator. Transfer is, then, the measure of learning efficiency on a simulator. On the other hand, fidelity is the similarity in degree between a simulated situation and the same operational real situation. Such a similarity is measured both in physical terms – as visual amplitude, spatial disposal and control and equipment appearance - and in functional terms – such as information on display screens, response options, or control capacity of a simulated situation.

Simulators have often been used in maritime education and in professional training for more than thirty years; in fact, the idea of using simulators to reproduce the realism of maritime communications as was done in other maritime subjects, was already suggested by Weeks in 1975 (Weeks, 1997). However, Wawruch (2000) has pointed out that there was no international recommendation or requirement until the Standards of Training, Certification and Watchkeeping Code approval came into effect, with regard to operational parameters of used equipment, training subject and timetable, level of difficulty of practical exercises, instructors' qualifications and assessment methods.

Training with simulators has a special utility when an effective and quick response is required in an emergency situation, or when mistakes cannot be tolerated during operational periods. The use of simulators acquires a greater value when the updating of previous training in some skills is needed (Ray, 2001). Lemburg (2000: 1017) states how simulators can be used in a broad sense:

Establishing a culture of common sense and safety, developing a management attitude the simulator will be used in future as a tool for the training of management objectives such as teamwork, communication and stress management. Emergency management, crowd and crisis management in form of deepened bridge and crew recourse management will be the training of the future.

In the particular case of maritime English teaching, the use of simulators seems to have been implemented successfully, as confirmed by publications related to a variety of experiences of its use as carried out by several MET institutions.

One of the first references to the use of simulators for training maritime communications is found in the work carried out by Peskov, Tenistcheva, Vinnitsky and Matevosyan (1994), who coined the term "combined simulation training", that is, the use of simulators with combined aims of "classical language education" and "specialised simulation training":

The word combined means that professional training and English training should be organised not only together (simultaneously) but in tight interdependence, in the context of the officer's professional activities. Maritime English turns from the subject of learning into the instrument to solve current professional problems at the real-time scale. (Peskov et al., 1994: BG2-5)

The methodology and programmes of special courses of the combined simulation training have been worked out at the Noborossiysk State Maritime Academy (Russia) and, in the words of these authors, have been successfully used at the maritime education and research centre for simulation training of masters and deck officers.

More recent are the experiences of the University of Cadiz (Spain) and the Danish Maritime Institute. With respect to the former, Losey indicates:

[...] the pedagogic use of ship simulators proved to be an encouraging experience enabling the learners to behave spontaneously and fluently [reducing] the [margin of error] to a minimum – the simulation also allowed us to trace the learner's process individually. Another important consideration is that they learnt content-information through a language subject [...] From the teacher's perspective as controller, this activity enhances direct means for integrating [the technical knowledge] in a more active manner. (Losey, 2000)

With reference to the Danish Maritime Institute's, the course is centred on navigation and communication procedures. Bay (2002) states that the power of such a system consists of officers being confronted by a number of different situations and having to record, at the same time, their reactions both at the communicative and operational levels, so that in the debriefing session instructors can make remarks about which reactions are more or less safe and advise over the right way to proceed in future similar situations. Moreover, at the Kyiv State Maritime Academy (Ukraine) an experimental programme is being carried out that aims to establish the use of navigation simulators effectiveness as tools to maritime English teaching. In relation to this Yakushechkina (2002) says that:

[. . .] simulator-assisted training maritime English is a matter of arguments and on-going research. However nobody can deny that simulator-based education is an important element in developing the total competency of a future watchkeeper.

Likewise from the University of Ljubljana (Slovenia), together with the Istituto Técnico Náutico di Trieste (Italy) a project co-financed by the European Union was developed which consisted of an eight-week simulation workshop on the rescue of a grounded tanker. Simulations were carried out separately on the nautical, engine room, communication and cargo handling simulators (Fabe, Suban & Klasinc, 2003) with the communication simulation developed on the Transas TGS 2000 simulator. The participants followed a three-stage programme. First, they went through the practical use of a VHF DSC station; second, they studied the Standard Marine Communication Phrases (SMCP), and finally they were divided into groups, so that each individual rescue service could simulate its own role with relevant standardised phrases in the case of an eventual real rescue.

These communication simulation workshops have shown, in the words of Fabe, Suban, and Klasinc (2003) that "it is extremely difficult to anticipate the language that will be used in each individual scenario, although the SMCP proved to be very useful, offering us a long list of phrases indispensable for each scenario".

Another interesting course in maritime communications aided by the use of simulators is being carried out by the Maritime Safety Training Centre, Jovellanos (Spain). In this case a full mission VTS simulator, based on real equipment, provides a realistic environment that reinforces the learning process and allows for the contextualisation of both traffic image interpretation on Radar /ECDIS screens and oral communications via VHF radio. The use of VTS simulator in this way can, as pointed out by Diaz (2005) "significantly enhance the standard phrases learning process by contextualizing their use and contributing to reinforce the communicative approach". Finally, and considering that not all maritime education and training institutions have simulators at their disposal, it is also possible to use programmed computers specifically designed to do simulation exercises, in order to use computer networks for this purpose (De la Campa & Rodríguez, 2001).

4.2. Maritime English e-learning

When the MARCOM Project was first being developed, between 1997 and 1999, Internet didn't seem to be a resource widely used for maritime English teaching, as Table 1 indicates, although 58 per cent of MET institutions confirmed having Internet resources at their disposal in their centres, there is no record of any of these institutions having actually used it as tool to teach languages. As was indicated in the Project's final report, this could have been due to the fact that in many schools there was only one computer and one person at the school with an Internet connection, and very few schools were making it available to students as well as to teachers. It was a limited teaching tool because of limited general accessibility, but things have changed in light of the reported experiences since then by several MET institutions.

In relation to maritime English e-teaching and e-learning, the Internet can be useful at three levels:

- At the level of oral communication, and especially through videoconference tools, computer use allows us to conduct conversations in real time and between students from different nautical schools all over the world, or to talk to those people specific to the maritime environment. This tool can also be used to achieve virtual exchanges with other universities to practice English language oral skills.
- At a terminological level, the computer enhances the configuration of a nautical-terms database, either at an individual level or at a group level. Such databases are useful to store terms with related information such as pronunciation, meaning, graphics or explanatory videos.
- At an audio level, the computer allows for the realisation of activities based on video clips, or other samples of audio material, either downloaded from the Internet or provided on specialised CD/DVD ROMs.

We can then classify the initiatives and resources available through the net for the teaching and learning of maritime English in four general categories: web based databases, e-mail and forum use, software specifically designed for maritime English e-learning and maritime terminology databases available on the net.

4.2.1 Web databases

With regard to web databases, from the European Commission, and through the METHAR Project (2002) the creation of a maritime English database was recommended, a corpus containing both oral and written maritime English texts obtained from officially allowed records. The object of such a text corpus is to study how English actually works in the maritime context or situation. Its availability can have practical consequences in providing:

- Teaching materials for new textbooks
- Material for drills and testing
- Audio-lingual and visual support for maritime English instruction
- Maritime dictionaries and glossaries
- On-line textual and lexical database
- CD-ROMs for interactive learning and testing of maritime English

In the same way, and in view of the lack of multimedia materials generally available to maritime English teaching, from the Merchant Marine College of the Shanghai Maritime University, Wei (2005) suggests setting up an Internet database to place and consult such materials:

[...] so the multimedia materials do exist but are scattered, they should be collected and integrated for the benefit of maritime English education and training. The idea in this case is to combine with all the multimedia raw materials or raw data into a shared platform. The modern computer technologies can 100% support this idea and the contributors of those raw materials can sit down and do something by mutual agreements. In more details, the platform can be deployed in a country, maintaining a huge data on maritime videos, pictures, voices and software [...] The job of maritime English lecturers, as the main users, is to select and adapt those raw materials for their final use in classrooms.

In this sense the initiative carried out from La Laguna University (Spain) must be emphasised. Such an initiative consists of the design of a web page among the students with the purpose of creating a materials database that is useful both for students and maritime English teachers. The usefulness of such a materials base, which could contain texts, exercises, conversations, images and video clips, is pointed out by López de Vergara and Hernández (2003):

- The teacher of maritime English could make use of the material in their work.
- The students of maritime English could use the material for self-study.
- People working in maritime companies and their organizations could use the material for self-study.
- With the help of this material, it would be possible to plan a language course that would suit the specific needs of maritime and port companies.

4.2.2 E-mail and forum use

A second use of Internet technology lies in e-mail and forum use to improve communication skills. With that aim in mind, the University of Cadiz (Spain) and the Åland Mariehamn Polytechnic University (Finland) set a project in motion aiming to put students from both universities in communication through electronic mail. While such a project couldn't be concluded, it served, as Bocanegra (2002) explains, to demonstrate the possibilities of using this kind of technology and its repercussions on students' motivation and attitude. They concluded that while new technologies do not offer the natural interaction characteristic of human communication, there is no doubt that, with appropriate software, it can be very useful at the individual level, and as a means of long-distance teaching and learning.

Also from the University of Sistan and Baluchistan (Iran), Kekhaie (2003) suggests that students should be encouraged, before their first sea service, to use messages to acquire experience in communicating with different foreigners. According to this author "the goal is to allow them to familiarize themselves with discourse conventions and topics of their chosen fields or interests, so that they might practice using these conventions, discussing those topics, and making connection with other users, students, and other professionals in those fields or with those interests". A similar idea is held at the California Maritime Academy (USA), where Benton (2003) proposes the development of an intra-AMU Internet-based forum whereby students enrolled in maritime universities throughout the world could practice their English skills with each other. Benton (2003) points out that this project could be included in the curriculum of basic English courses, with assignments involving written communication between students at different maritime universities.

4.2.3 Specific maritime English e-learning programmes

Internet is much more than a mere repository of information. Its even greater utility lies, following the MARCOM Project (European Commission, 1999), in its ability to let us exchange information, almost instantly, and at relatively little cost, with people all over the world: this capacity of the Internet to present and transfer many forms of information almost instantaneously, makes it the best vehicle for long-distance education. In addition, long-distance learning techniques could allow maritime English to be taught to mariners even while they are at sea. In short, Internet allows for a very high level of freedom in the learning process giving more leeway to the student to decide how, when, and where to access materials.

There are at present two projects at different stages of development related to English language e-learning: the MarEng Project and the FlexiMod Approach. The MarEng Project, currently being developed by maritime institutions from six countries within the European Union (Belgium, Finland, Latvia, Poland, Spain and the United Kingdom), deserves special mention. This project is self-defined as: "a transnational project that aims to promote the maritime English language competence of those working in the various maritime professions in Europe. Its objective is to produce an innovative maritime English learning tool to be made available on the Internet". The advances of this project, that started in October 2004 and is estimated to be concluded by March 2007, can be consulted on the web at <http://mareng.itu.fi/>. MarEng materials, arranged into thematic modules and produced for different language levels, are contained in a database that will be composed of texts, different kinds of interactive exercises, images, sound and video clips. MarEng can be used by teachers and students as well as by individuals developing different maritime tasks, and they may be used online in the classroom, in long-distance education and for self-studies (Katarzynska, 2005).

The second project, the FlexiMod Approach, is being developed by Private Wirtschafts-und Technikakademie Rostok (Germany) in cooperation with Marinesoft (Meinhardt, 2005). In the first stage the project was intended to develop a web-based training course suitable to meet the requirements of modern e-learning. But problems emerged during its development, related to limited web access, the lack of available technical equipment on board, and the variable technical skills of the potential users, thus forcing a revision of the FlexiMod concept. Finally the training course consists of the following material:

- Printed material with student books and CD for listening comprehension and a teacher's handbook for face-to-face teaching in the classroom and for self-study,

- A computer-based training CD as a series of blended learning CDs applicable for classroom teaching and computer-based self-study, and
- The web-based learning courseware controlled by a learning management system, where the contact with the tutor is independent of the time and location.

In this way, and as its name suggests, FlexiMod Approach is a flexible maritime English course that can be used both in the classroom, trainer guided, for self-study, and on board a vessel via Internet, either in the form of tutor-guided long-distance learning, and for self-study.

In addition to these two examples, a model called TIME (Technology in Maritime Education) is being developed by the Maritime University of Constanta (Romania). The goal of this model, as Constantinescu (2003) indicates, is "to work with teachers and trainers, on one side, and pre-service and in-service seafarers, on the other side, to improve various competency categories through the integration of technology on maritime education". Also, from the Sydväst School of Maritime Studies (Finland), and with the conviction that many topics can be realised as e-learning in maritime English – e.g. vocabulary exercises, reading comprehension, and grammar exercises, courses of this kind are being offered to students. From this initiative, Bäckman (2004) concludes that "students like the new technology, and e-learning teaches them to take more responsibility for their own studies. Students' feedback has been very positive. About 90% of the students preferred e-learning to traditional classroom teaching".

And finally, from the College of Maritime Transport and Technology (Egypt) we find a different use of new information and communications technologies applied to language teaching. (Youssef & Taher, 2005). This MET institution provides its students with a radio frequency identification system (RFID) that serves, amongst other things, to help students to perform an overboard self-studying programme, providing interactive programmes that communicatively and informatively pinpoint students's weaknesses. According to Youssef and Taher (2005), the self-study program assisted with RFID consists basically of the following five steps:

- The student is equipped with a handheld device, which in turn is integrated with a RFID reader.
- The handheld device runs multimedia educational software including different materials such as texts, images, audio and video.
- Different educational locations and equipment overboard are attached with different passive tags, where each tag identifies their respective location.
- As the student passes by a piece of equipment to study it, the integrated RFID reader within the student's handheld detects the nearby passive tag and is able to identify the object.
- Upon object identification, the installed software on the handheld device starts to display information about that object; this information could include rich presentation media like audio or video. In addition, instructions might be displayed to the student for practical training that might be required to be conducted by the student.

The authors consider the benefits of using this technology as being: "the availability of the self-studying concept with the aid of the RFID, with the aid of an electronic maritime dictionary offline and online, in one of the major needs that would serve to assist students in dealing with maritime English courses with ease".

4.2.4 Multimedia and hypermedia maritime dictionaries

There are currently nearly 50 multimedia maritime English dictionaries available for free on the Internet, however most of them don't take advantage of their automated format (De la Campa, 2004). For example, the presentation of alphabetised lists is the most used, but it is not the most appropriate for this case, because it obliges one to do a word-by-word visual search, which means an enormous waste of time and an inconvenience to the user. Another significant shortcoming is the lack of data: taking into account the format, not only could the number of terms be almost unlimited, but data terms could also be highly varied, because this format, unlike the traditional paper-format, allows for the storage of images, graphics, videos and sounds. On the other hand, a dictionary of this kind could be designed by the maritime English teacher with the aim of making the learning of maritime terminology easier for the students. With such a purpose in mind the teacher must take into account the following design characteristics:

- The dictionary configuration must be simple to use by any teacher with basic computing knowledge.
- Its installation on the Internet must be easy, quick, and achievable.
- Its location, access and use must be easy and agreeable.
- It must allow the suggestions and ideas of the students to be added.
- It must offer the possibility of continuous renewal and expansion.

This kind of dictionary configuration is relatively easy when the required material is available. Such a dictionary consists of a database in which terms with definition, image, and pronunciation can be registered. More information about the configuration of such databases can be found in works written by De la Campa and Rodríguez (2001), as well as by Barbier, Alegria, and Dalley (2002). The advantages of this kind of dictionary versus traditional dictionary in print format are:

- The possibility of storing large quantities of terms with their respective information.
- The possibility of maintaining and updating the information quickly and easily.
- The information can be distributed internationally, so it is very important to confirm the reliability of the data that is contained in it.
- The information retrieval can be done in a selective way, in the required order or with the desired terminological structure.
- It is possible to introduce visual data such as graphics or images.
- The terminological data collection work is much easier.

As was previously pointed out, in relation to students, as individuals, they can use this type of dictionary as a tool to learn vocabulary over their academic career because the dictionary can be used as a note-book in which students must include a lot of references that help them to retain terms learned efficiently. On the other hand, this kind of dictionary used in a collective way helps students to share curious or very specific terms that are difficult to find in traditional dictionaries, and it serves as a notice board to pose queries and doubts about such terms that can be later explained by the teacher.

5. Conclusions

Despite the fact that the use of the computer as a learning tool has been used for over twenty years, and that its use in language teaching is nowadays more widespread, thanks to its obvious advantages both to students and to the teacher, according to the data reported in MARCOM Project, it did not seem to be a tool widely used by maritime English teachers some years ago. There were, also, very few specific materials for use in its training. Nonetheless, in the light of the initiatives compiled in this article and the several proposals of maritime education and training institutions from many more countries, it seems that these technologies are beginning to be accepted as highly useful tools to improve the maritime English teaching-learning process.

Lastly, the shortage of specific multimedia materials for instructional purposes should not be sufficient reason for the rejection of its use by maritime English teachers, because new information and communication technologies permit a variety of language teaching methodologies based on computer use: Internet access, electronic mail, chat, forum and videoconference, simply developing these media in terms of their immediate advantages and by focusing on the material available, choosing the proper methodology that allows us to join new technologies with traditional ones.

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[1] MARCOM Project: "The impact of multicultural and multilingual crews on Maritime Communication" was coordinated by The Seafarers International Research Centre, with the participation of The World Maritime University, The Institut für Sicherheitstechnik, the Centre for Language Communication Research and the Escuela Superior de la Marina Civil of Bilbao. Its main objective is to recommend improvements in the communication skills on bridge, based on the following points:

1. To study the feasibility of a single working language that could be used in all circumstances.
2. To carry out a linguistic analysis of ship-to-ship and ship-to-shore communications.
3. To design a language guide to be used in emergency situations and for accident prevention.
4. To analyse the impact and causes of intercultural tension on board.
5. To assess the methodologies used nowadays for communication skills teaching in the maritime education and training institutions and to elaborate a pilot programme in keeping with actual regulations and modern methodologies.

In short, this Project is currently the most extensive and detailed study about the numerous linguistic aspects of communications in maritime settings.

R.M. de la Campa Portela, ETS Náutica y Máquinas, Universidad de A Coruña, Spain
A. Bocanegra, Facultad de Ciencias Náuticas, Universidad de Cádiz, Spain

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Article

Using online streamed audio and podcasting in L2 teaching and learning: how do they work and copyright implications

Abstract

Providing students with contemporary, up-to-date listening experiences in L2 is an ongoing challenge for language educators. Indeed, much commercially available material is dated or presents language in an idealised and decontextualised way. Audio-streaming provides a wealth of resources which may go some way towards resolving these issues. Contemporary teaching and learning materials on an extremely wide range of topics are easily downloaded from national radio station websites and are accessible via systems such as podcasting. This paper discusses one attempt at integrating these resources into tertiary language courses and demonstrates how these can be easily and efficiently integrated into meaningful online learning tasks. In addition, we discuss the complex issue of copyright and online materials in Australia, UK (Europe) and the US.

Keywords: Podcasting, Audiostreaming, Copyright, L2, Authentic materials

1. Introduction

This paper [1] offers an introduction to the use of technologies such as podcasting and Internet audio recording. Given our focus on L2 teaching, we limit our discussion to the following areas:

1. research and trialling of the use of online audio materials in languages other than English. Our project was focussed on broadcasts in Italian from Italy;
2. use of authentic audio material available from public broadcasts in languages other than English, and intended for a native speaker audience;
3. materials of a non-dramatic and non-fiction nature. Most of the podcasts we used or studied were radio programmes on history, life-style, food, cultures, etc.

This paper relates to a project entitled MiLTaL (*Multimedia in Language Teaching and Learning*) which we ran during 2006 at the University of Melbourne, under the auspices of the Faculty of Art. The project had the following objectives:

- Creation of a model that could be utilised for the construction of online multimedia learning tasks and generalised to other languages in a simple and effective way. An important aspect of the model was the integration of *AuthorWiz*, a purpose-built software tool developed by the Horwood Language Centre (HLC), The University of Melbourne expressly for languages, and the University's online Learning Management System (LMS);
- Creation of an archive of multimedia objects (initially audio files but with possible extension to files from online streamed video) and an arsenal of related online teaching and learning activities;
- Deployment of these activities through the University's LMS.

Given the ubiquity of mp3 players and the substantial increase of podcasting worldwide (Chan and Lee 2005: 64), we set out to investigate some fundamental issues involving the integration of such new technologies into L2 teaching and learning. In particular, with this paper we will try to answer the following questions:

- Question 1.* What technologies are available for the use of authentic audio materials in real and virtual L2 classes and how do they work?
Question 2. Are these technologies difficult to use?
Question 3. Are there any legal or copyright restrictions when using audio materials saved or downloaded from the new technologies?

2. Background

Our research into and use of audiostreaming and podcasting are part of our work on a multimedia project funded by the Faculty of Arts at The University of Melbourne: *Multimedia in Language Teaching and Learning* (MiLTaL).

Both the project and this paper are informed by three observations. First, students today learn in a different way from the one generally assumed by educational curricula and methodologies. As Thorne and Payne put it, 'characteristics [of the so-called Net Generation students] stand at odds with the prevailing norms of educational culture... students will learn differently than their teachers' (Thorne and Payne 2005: 380). Second, we recognise that podcasting and the use of captured streamed audio from the Internet are still unfamiliar territory in most L2 teaching and learning environments. We see

this paper as an opportunity to discuss the use of such technologies from a practical point of view and to assess their accessibility and reliability in a non-expert context. The recent 'podcatching' trial at Duke University (Thorne and Payne 2005: 385) is a notable example of the potential of the burgeoning mp3 and podcasting technologies (Chan and Lee 2005: 64) in tertiary education. However, we contend that the growth in the production and use of mp3 players (especially amongst young consumers) is still not fully recognised by most higher education providers. Third, technology is often considered the only solution to a still partially inflexible and inaccessible education system. We agree with this concept but also concur that the systematic use of the so-called 'disruptive technologies' (Godwin-Jones 2005) in language learning should be accompanied by preliminary research, testing, training and top-down support (see Laurillard 2002 for discussion). While we subscribe to the implementation of instructional technology as a fruitful way for students to 'gain a deeper sense of the language and culture they are studying' (Liontas 2002: 317) we also recognise that such an implementation needs to be supported by research and infrastructure. The acceptance of the latest technology cannot *per se* carry any long-term and systematic improvement to teaching and learning.

Some recent newspaper articles eulogise the freedom and flexibility new media such as podcasting and audiostreaming can bring to teaching and learning (Adenekan 2005; O'Hear 2005; Arthur 2005; Hearnshaw 2006; Warner 2006). Warner draws a comparison between the task of academics and that of TV executives: their job is to 'instruct, inform and ... entertain (the audience) while hoping to hold their attention for at least one hour' (Warner 2006). Warner goes on to say that such a task is a 'doomed model'. According to Warner, Podcasting is the only solution for the learning industry. As much as TV programmes, films and other media are now readily available and downloadable from the Internet, so should lectures and seminars be accessible to students outside the traditional university's timetable and teaching setting. Moreover, Warner points out that by making teaching materials available at any time from anywhere, podcasting makes teaching more accountable than ever.

It is difficult not to agree in principle with the need to provide a more flexible and accessible educational system. However, what Warner omits to mention are the pedagogical and research underpinnings that support and sustain the use of podcasting in traditional or virtual classrooms.

Warner makes a strong case for the use of the new medium and a more flexible and accessible teaching and learning system. However, when Warner asserts the need to 'strike the right balance between allowing good students to take advantage of this resource (podcasting), but discourage bad students from staying at home all the time and watching the lectures right before the exam', he unconsciously reveals how pedagogy and research are still lagging behind practice. Learning practices should go well beyond the highly subjective notion of good and bad. The 'good' and 'bad' discourse (see Avis, Bathmaker and Parsons 2002: 35-39) unveils a limiting and inflexible approach towards learners that is in sheer contradiction with the flexibility advocated for teaching. Clearly the use of emerging technologies needs to be supported by a marked pedagogical change (Kern Ware and Warschauer 2004: 249) in which teachers' skills and role need to be redefined. As the *Cultura* project shows, teachers need to develop intercultural and technological skills that represent a substantial change to the more traditional teaching and learning system (Furstenberg 2003).

3. Considering the questions

3.1. Question 1. What technologies are available for the use of authentic audio materials in real and virtual L2 classes and how do they work?

Until recently, the multimedia materials used in language teaching were based on commercially available products. A significant limitation with the use of such products is that they are typically well out-of-date by the time they are integrated into the teaching and learning program (Kramsch 1988). Moreover, the customised recording of non-authentic audio materials, such as out of context conversations or speeches, often requires considerable effort and time. By contrast, the development of a database of resources, which can be both up-to-date and, more importantly, updated at any time and at relatively low-cost, represents an advancement in the use of authentic teaching materials.

The following process was trialled in our project:

- Phase 1. Recording of audio materials by means of a) Podcasting and b) Streamed audio capture
- Phase 2. Editing
- Phase 3. Authoring of learning activities and posting

3.1.1 Phase 1. Recording

We set out to create an archive of audio files which could be used in the construction of learning activities. The mp3 format was chosen as the most common one used for digital audio materials. Also, file size is more manageable than other formats such as AIFF or AAC. This is a crucial consideration as the smaller the size of the audio file the easier it is for users to download it and play it on mp3 players. As the project was focussed on audio materials for Italian classes, we researched the RAI website (Italian national broadcaster): <http://www.radio.rai.it/>. Other broadcasters or providers of online audio materials via podcasting or streaming can be found by means of online podcast directories. Amongst the many available <http://www.podcastingnews.com/forum/links.php> and <http://www.podcast.net/> proved to be the most useful. In particular, the former provides an international/podcasts by language directory (fig. 1).

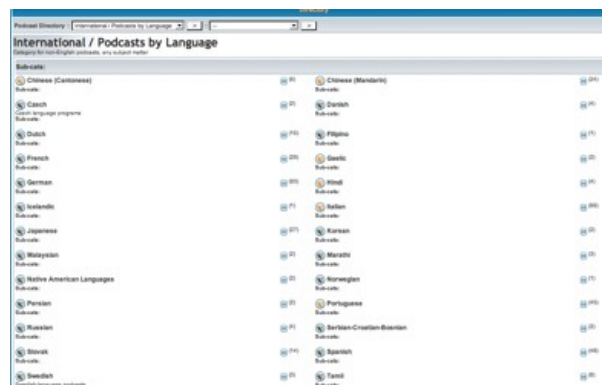


Fig. 1 The international/podcasts by language directory available at http://www.podcastingnews.com/forum/link_89.htm

a) Podcasting

This technology combines the advantages of having direct access to radio broadcasts at any time and anywhere (provided they are made available by the broadcaster) and extremely fast and efficient downloading into mp3 players or personal computers. Podcasting is an automatic mechanism by which multimedia files are transferred from a server to a client. The provider of the multimedia file makes it available by giving it a general purpose Internet address (URL). The file is then posted by the provider on a webserver through another file commonly known as the feed. This is a machine-readable list of the web addresses from which sections, episodes or different versions of the audio material can be accessed. Such a list of addresses is published in the RSS format (Really Simple Syndication, a lightweight XML format designed for sharing Web content) and contains detailed information (date of recording, title, etc.) on the audio material. To download the multimedia file (or podcast) the user needs to enter the feed address (or URL) into a 'podcatcher' software application. The software can be set up so that it updates the feed (hence the audio materials) regularly and automatically and downloads the new files directly onto the user's desktop or mp3 player.

We trialled a shareware software application called *iPodder* (fig.2). The user locates the address of the feed on the broadcaster's website (Radiorai in this

case). The address is then entered in the 'add a new feed' window so that the software can then authenticate the feed and download a list of available episodes or programmes. Once selected, the material will be downloaded into a folder or library.

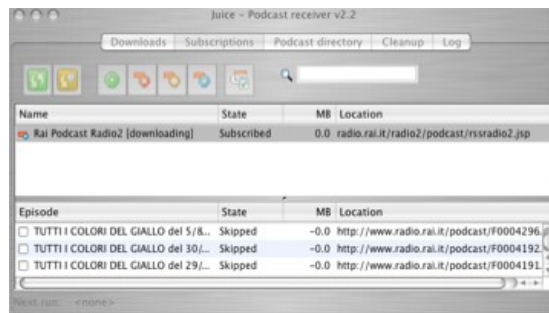


Fig. 2 iPodder.

Another way of transferring audio material is through the podcast directory of iTunes. This is a much more effective way of searching and selecting audio materials, as it provides comprehensive information on each subscription (see fig. 3) including the content of each material or episode (fig. 4).



Fig. 3 iTunes displays the 'feed' and the available episodes.

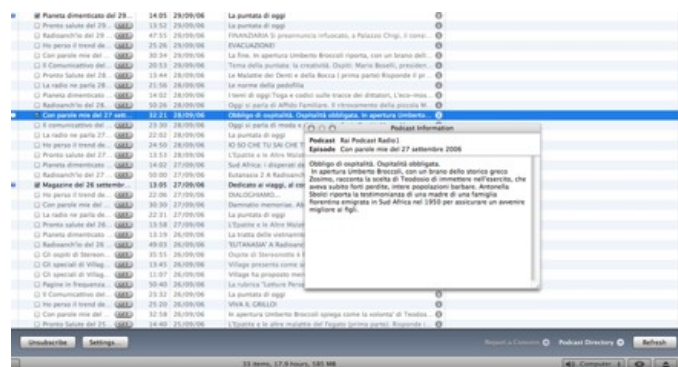


Fig. 4 Once the iTunes user has subscribed to a 'feed', all the programmes and episodes are listed chronologically. iTunes can be set up to update the 'feed' regularly. The most useful feature is the podcast information tool that allows the user to find out the content and themes of each episode before downloading.

Users can select the podcast directory in iTunes and then, through a simple search tool, look for feeds according to criteria such as genre, topics, and language names in English (eg French, Japanese). However, the 'power search' tool (the most sophisticated search tool in iTunes) will limit the search and provide only a limited number of hits when one performs a search by country of origin or by language names written in the target spelling (eg. *italiano* or *español*). Once the episodes are automatically downloaded either in the iTunes library or, if using a 'podcatcher' as iPodder, the files (normally in mp3 or mp4 formats) can be played with any of the pre-bundled free applications available with most computers (iTunes, VLC, Quicktime) or mp3 portable players.

Once subscribed to the iTunes music store, the user can browse or search podcast 'feeds' in the same way as browsing the Internet. Access to audio materials (episodes or single programmes) is a simple three-step process: search for a feed by means of browsing or power search, select a subscription by simply clicking on the subscription icon, and choose the preferred programmes and episodes which are then automatically downloaded into the podcast library.

b) Streamed audio recording

Several free software applications are available from the Net which record playback of streamed audio (archived or live) and convert the material into mp3 files. We opted for the commercially available *iRecord/Music* software package, compatible with Mac OS X operating system. Its use is extremely simple, as it operates just like a web browser and with only two mouse clicks the audio stream can be recorded automatically (fig. 5 and 6).



Fig. 5 *iRecordMusic*: once the Internet browser is on the page with the link to audiostreaming, a click on the link and one on the blue circle in the top right corner of the window will start the recording of the audio stream.



Fig. 6 The recording of streamed audio.

3.1.2 Phase 2. Editing

The first two technologies described above (podcasting and Internet audio recording) have in common the fact that they provide the possibility of capturing authentic audio materials intended for native speakers. However, because the materials are aimed at a native speaker audience, the files often need to be edited to cater for students' cultural and linguistic proficiency. Once the authentic content has been collected, the material will need to be properly assessed by the instructor or teacher in order to determine its validity, level, themes, and relevance to the curriculum in question. Providing authentic content to L2 students is not sufficient *per se* unless the use of the selected material is informed by sound learning objectives and the students' needs (Laurillard 2002: 182-184).

One of the most common criticisms levelled at the integration of technologies such as podcasting into the teaching and learning environment is that it increases the workload of teachers involved in the creation of the content (Menzies 2005; Sloan 2005). We argue instead that having to preview two or three radio programmes that might be useful materials for a lecture or language class activity is no more arduous than spending time in a library looking for sources or textbooks, or perusing recent newspapers and magazines for contemporary material. We wish to emphasise how effortless and time efficient the two types of recording processes described above are. In particular, *iTunes* can be set up so that it will update all the subscriptions regularly every time the software is used or simply opened. Similarly, once started, the recording of streamed audio will end automatically and the file will be stored in the folder or directory selected by the user.

Once the audio files have been downloaded or saved onto a machine, an audio editing application will be needed to adapt the material to the learner's and curriculum's needs.

Most editing software applications available on the market offer the following features: waveform display window with zoom to sample level, standard cut/copy/paste editing, plus mixing, tone and noise generators, resample to different sample rates, adjust pitch (tape-style). We chose the *Sound Studio* application, however there are many other commercial and free applications available for PC and Apple computers. *Sound Studio* allows easy importing of mp3 files (and many more audio formats) and the selection of portions of recorded audio that can be subsequently copied and paste onto a new file (fig. 7).

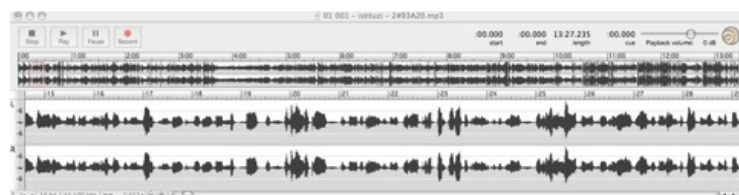


Fig. 7 *SoundStudio*. The waveform display allows a simple selection of portions of the audio file that can be subsequently cut and pasted into a new file.

Once the captured audio file is edited in the desired way and saved, this can be integrated as a learning object into an appropriate learning task.

3.1.3 Phase 3. Authoring and Posting

For this crucial phase of the model we used a software application designed by the Horwood Language Centre at the University of Melbourne: *WebWiz* (fig. 8), which consists of a web interface (*WebWiz*) for management of learning objects and online lessons, and *AuthorWiz*, a simple and effective authoring tool which allows teachers to create online tasks and saves them as web pages.

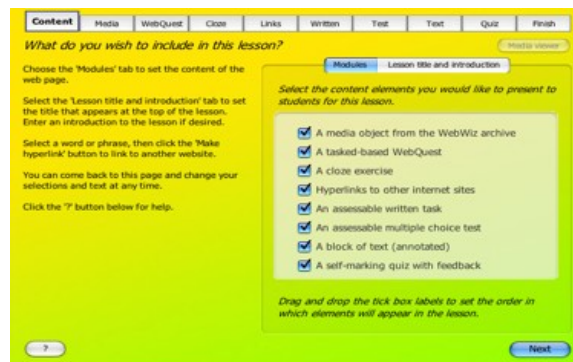


Fig. 8 The opening page of the *AuthorWiz* software.

AuthorWiz provides a step-by-step process, which allows the teacher to set up an entire lesson in a modular format in a highly flexible way. For example, it is possible to set up a learning activity based on the reading or listening of a narrative, followed by a cloze exercise, a series of links to Internet materials on the chosen topic and a self-marking quiz with feedback at the end. Once the order of activities is selected, the content of each component can be organised.

Two of the most useful features of *AuthorWiz* are the breadth of tasks available for use and the seamless integration of audio materials than can be uploaded straight from a database onto *AuthorWiz*. A user can select between 9 different activities, ranging from listening and/or reading tasks to quizzes.

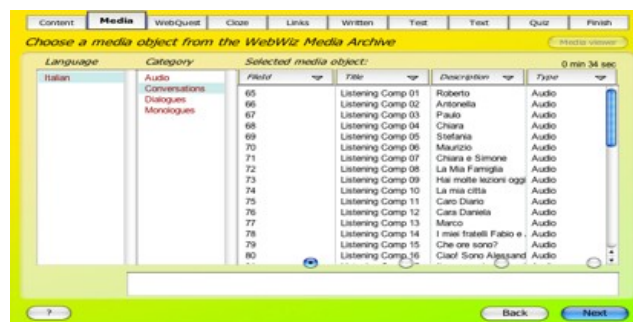


Fig. 9 *AuthorWiz*.

The media objects (archived on a local server) can be browsed and selected through an *AuthorWiz* interface (fig. 9). Once the object has been selected, a link is automatically created between the file and the learning activity.

Once all the modules have been selected and authored, the software creates a webpage with learning objects embedded. Each lesson has its own link which can be subsequently pasted into the appropriate sections of a Learning Management System (LMS).

3.2. Question 2. Are these technologies difficult to use?

There is no doubt that the technologies mentioned above are the result of a much more accessible IT environment. Users are now able to perform operations (such as the editing of audio materials), that would have required a high degree of IT skills until recently. As we have seen, in the case of podcasting, audio files can be downloaded automatically with little intervention on the user's part. The level of automation is particularly high with *iTunes*, as once the user subscribes to a number of radio programmes, the software automatically detects and downloads new episodes as they become available. The recording of streamed audio materials requires slightly more time and effort, as the programmes need to be selected manually. However, the fact that audio recorders such as *iRecordMusic* operate as a web browser makes the process highly intuitive.

As we have shown above, editing has also become extremely simple. The task of extracting relevant portions of audio files can be performed by selecting the 'text' from the software's display and subsequently copying and pasting the content into a new file.

However, we do recognise that the phases described above require the use of at least 3 discrete software applications. The simultaneous use of multiple applications is not the most desirable IT environment for unskilled or little skilled users. The next step in our work in this area is the upgrading of *WebWiz* to incorporate both the editing and authoring capabilities in the one software package.

3.3. Question 3. Are there any legal or copyright restrictions when using audio materials saved or downloaded from the new technologies?

Copyright laws differ substantially between countries. It is not the scope of this paper to provide a full account of the guidelines on copyright for Higher Education institutions in UK, USA and Australia. Nevertheless, it is useful to provide a brief overview of whether the abovementioned countries have comprehensible and unambiguous guidelines on the use of broadcast audio materials for teaching purposes. [2]

3.3.1. Australia

The Australian Copyright Act (1968) deals with the use of copyrighted works for educational purposes. The statutory licensing scheme, contained in Part VA of the Copyright Act, specifies the terms under which the copying and communication of materials to students does not constitute an infringement. A summary of these terms is available from [The University of Melbourne Copyright Office's website](#) (Copyright Office University of Melbourne 2002):

To be covered by the scheme, a copy or communication must be made by or on behalf of the University, and it must be made solely for the educational purposes of the University or another educational institution. The 'educational purposes of the university' include:

- * use to teach students;
- * making the copy available to students as part of a course of study at the University; and
- * retention in the University library or elsewhere (eg by a staff member) as a teaching resource

Furthermore, the Digital Agenda amendments to the *Copyright Act* (2000) require universities to take all necessary steps to guarantee that on-line access to the educational materials covered by the licensing is not given to the general public. Appropriate marking, notice and record-keeping requirements must be met. The name of the institution using the material, the date the program was transmitted and the date the copy was made need to appear in a label accompanying the material.

'Fair dealing' is also contemplated in Australian copyright law. However, as in the UK (see below), the guidelines under fair dealing are somewhat vague

and subject to interpretation. The most preferable scenario for a teacher in Australia is to be working for a University that has obtained a remuneration notice from *Screenrights*, the organisation that collects money for copyright owners. Under the licensing scheme, teachers can do the following:

- copy from any television channel (pay, free to air, cable or satellite) or radio station;
- copy any type of program
- copy entire programs or excerpts
- make as many copies as you need
- make compilations of material on the one tape
- have copies made by anyone, anywhere, anytime (taken from *Screenrights* website: <http://www.screen.org>)

Licensing schemes, common to both Australia and the UK, represent a more reliable and safe environment for instructors wishing to use e-learning technologies. Instead, the fair use or dealing does not provide detailed guidelines that can be applied to the use of podcasting and streamed audio. Under such guidelines the use of these media may not represent an infringement. However, the need for the institution and the teacher to comply with copyright law under broad instructions might discourage the use of e-learning materials for fear of prosecution.

3.3.2. The UK and Europe

The *Copyright, Design and Patents Act 1988* in the UK states that ownership is the most important issue when establishing copyright of online materials. All materials published on the Web are subject to copyright and may not be disseminated without the creator's permission, unless stated otherwise. Piecing together a website containing chunks of other people's work that you have gleaned from their sites without asking their permission is (a) extremely discourteous, (b) likely to be in breach of copyright and (c) possibly considered as plagiarism (taken from Information and Communications Technologies for Language Teachers - [ICT4LT](#)).

The question arises whether this is the case with audio materials made publicly available by radio broadcasts through audiostreaming and podcasting. Clearly, this depends on whether the audio materials are copied and reproduced for public use or for personal, non-commercial use. This would suggest that such materials could be copied for educational purposes, provided the relevant institution does not profit from the students' use of these resources. However, recent EU legislations have restricted even further the exploitation of Internet-based materials.

Recent regulations in Europe (2001) and specifically in the UK (2003), define more narrowly what is meant by public use of works made available through the Internet: the distribution of materials created by a third party is a public activity even if access to these resources is restricted or made available through a local network (Statutory Instrument No 2498, 2003). Hence, before audio materials can be copied and reproduced it is necessary to obtain permission from the copyright owner. Moreover, the author of the materials used for teaching purposes would need to be sufficiently acknowledged (JJSC Legal Information Service 2004). When it comes to the use of broadcast audio files in Higher Education, it is possible to reproduce (partially or in its entirety) a radio programme that was made available through the Internet, provided the college or university has purchased an Educational Recording Agency license (ERA). Under the terms of the license, the source and author of the material still needs to be properly acknowledged. Moreover, if copies of the audio material need to be made, consent from the copyright holder might be necessary. One way to obviate this problem is to stream the materials onto an LMS so that students can play them as many times as they need but cannot copy or store them onto their personal computers or mp3 players.

What emerges from the further tightening of the definition of 'public use' is that unless Higher Education institutions purchase the license, it is very difficult for individual teachers or universities to take advantage of the audio materials available online.

3.3.3. USA

In the US, the use of copyrighted materials in Higher Education institutions is governed by two sections of the copyright law of the United States of America: Section 110(2), also called the *Teach Act*, and Section 107, also called 'fair use' (United States Copyright Office 2006). The exemption from copyright restrictions applies to 'accredited nonprofit educational institutions'. Amongst the teaching materials covered by the new amended section of the *Teach Act* (2002) are 'digital transmissions'. For this type of material there is a copyright exemption if the Higher Education institution

- (I) applies technological measures that reasonably prevent —
 - (aa) retention of the work in accessible form by recipients of the transmission from the transmitting body or institution for longer than the class session; and
 - (bb) unauthorized further dissemination of the work in accessible form by such recipients to others; and
- (II) does not engage in conduct that could reasonably be expected to interfere with technological measures used by copyright owners to prevent such retention or unauthorized further dissemination;

Teachers might be easily discouraged by the complexity of the legal issues involved in the use of digital materials such as podcasting and audiostreaming. It seems unclear whether the class session to which paragraph (aa) refers is meant to be interpreted solely as a classroom teaching activity or as any learning activity moderated by an instructor. It is also uncertain whether the use of excerpts taken from a podcast would represent an 'unauthorised dissemination of work' or not. Finally, the recording of streamed audio can be interpreted as an interference with the technological measures used by broadcast to avoid unauthorised retention or dissemination. Streamed audio materials are not intended to be recorded and reused. They are only meant to be 'consumed' while they are played through media technologies such as *Quicktime* or *Adobe Flash* amongst others. Older episodes or programmes are eventually replaced by more recent ones, which implies that the length of time needed for storage of the material would be 'a longer period than is reasonably necessary to facilitate the transmissions for which it was made' (United States Copyright Office, 2006). This would therefore seem to represent an infringement of the US copyright law.

Podcasting instead seems well suited to the requirements of educational institutions. Retention or distribution of files that have been downloaded as podcasts by users does not go against the technological measures set out by the author of such materials. Moreover, the use of small excerpts taken from podcasts could fall under the 'fair use' terms. More details on the use of podcast and its compliance with US copyright are available from a comprehensive podcasting legal guide (Creative Commons, 2006). However, we could not find specific copyright guidelines for the recording of audiostreaming for teaching purposes.

Teachers in the US can nevertheless take advantage of several resources and guidelines on copyright available from the Internet. In particular, an online *Crash Course on Copyright* (Harper 2002) provides a summary of the conditions that need to be met when utilising copyrighted materials:

1. The performance or display must be:
 - a. A regular part of systematic mediated instructional activity;
 - b. Made by, at the direction of, or under the supervision of the instructor;
 - c. Directly related and of material assistance to the teaching content; and
 - d. For and technologically limited to students enrolled in the class.
2. The institution must:
 - a. Have policies and provide information about, and give notice that the materials used may be protected by, copyright;
 - b. Apply technological measures that reasonably prevent recipients from retaining the works beyond the class session and further distributing them; and
 - c. Not interfere with technological measures taken by copyright owners that prevent retention and distribution.

Authority to make copies:

Finally, a new section was added to the Copyright Act to authorize educators to make the copies necessary to display and perform works in a digital

environment. New Section 112(f) (ephemeral recordings) works with Section 110 to permit those authorized to perform and display works under 110 to copy digital works and digitize analog works in order to make authorized displays and performances so long as:

1. Such copies are retained only by the institution and used only for the activities authorized by Section 110; and
2. For digitizing analog works, no digital version of the work is available free from technological protections that would prevent the uses authorized in Section 110.

As a consequence of the Teach Act requirements, many US Higher Education institutions published their policies and guidelines providing instructors and Schools and Departments with the information and assistance needed. A good example is the [Iowa University State University's e-library website](#) (Iowa State University e-Library 2006)

To summarise, the main issues for US teachers wishing to use podcasting and streamed audio are:

- Compliance with the requirements set out by the Teach Act and 'fair use'. The guidelines for the use of the most recent technologies seem to be ambiguous. This means that Universities' policies and information need to be as accurate as possible;
- The use of digital media is restricted in both the number of copies allowed to be made and the time during which such material can be used. This does not appear to be an obstacle for the use of podcasting in language teaching but it could be an issue for audiostreaming, as we have discussed above.
- Contrary to the UK and Australia, there are no licensing schemes in the US. This seems to leave the educational institutions and/or the teachers with the task of designing a code of practice that conforms with the statements of the Teach Act and 'fair use'. However, because the Teach Act does not cover all uses of digital media available today, the 'fair use' guidelines and the so-called 'test of spontaneity' are often the only guiding principles. An extremely useful source to understand these guidelines and debunk common myths about what is allowed under a 'fair use' is a website designed by the Office of Instructional Services, [Colorado State University](#) (Colorado State University, 2006).

3.3.4 Copyright implications

Technology already represents an obstacle for many teachers: learning new IT skills and integrating digital materials into curricula are already daunting tasks. Unless copyright legislation provides much clearer guidelines on the use of new technologies and materials in Higher Education, instructors can hardly be expected to embrace new pedagogical tools.

As we hope to have shown, despite the fact that European, UK, US and Australian copyright laws have introduced more rigorous criteria for the use of digital resources in educational environments, the licensing schemes in the UK and Australia provide more support for the use of broadcast materials without putting too much pressure and responsibility on the teachers' part. By accepting and paying for a licensing agreement, Universities provide top-down support that fosters the use of newer technologies in Higher Education.

4. Conclusion and future directions

In this paper we demonstrated the possibility of integrating authentic audio material available from podcasting and streamed audio into L2 teaching and learning. Recent software advances provide teachers with the possibility of authoring learning tasks using up to date and authentic audio material. We also described some of the copyright implications behind the use of such technologies in Australia, UK (Europe) and the US. Despite some ambiguities, copyright laws do not seem to prohibit the use of podcasting and audiostreaming in language teaching. We hope that future legislative amendments and a wider use of licensing agreements amongst Higher Education institutions will allow a further expansion of such technologies.

Our next step will be to examine further:

- The adaptability of such technologies to L2 teaching and learning activities. The incorporation of editing and authoring capabilities in one software package would improve the accessibility of software application and handling of authentic audio material
- The impact of online listening and online text-based tasks on linguistic proficiency. If, as our preliminary research proposes (see Absalom and Rizzi 2007), the use of online authentic audio material provides students with more learning resources and greater retention of information and vocabulary, the implementation of learning tasks based on authentic broadcast in L2 environments will be a great asset to both instructors and learners.

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Andrea Rizzi and Matthew Absalom
University of Melbourne, Australia

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