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. Levy (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.

<table>
<thead>
<tr>
<th>Teaching aid</th>
<th>This teaching aid exists in the institution</th>
<th>This teaching aid is used to m.e. teaching</th>
</tr>
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<tbody>
<tr>
<td>Computer labs and computer for classroom use</td>
<td>66%</td>
<td>7%</td>
</tr>
<tr>
<td>CD-ROM</td>
<td>39%</td>
<td>8%</td>
</tr>
<tr>
<td>Internet</td>
<td>58%</td>
<td>?</td>
</tr>
<tr>
<td>GMDSS equipment and/or simulator</td>
<td>70%</td>
<td>19%</td>
</tr>
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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.
- The International Maritime Language Programme (IMLP), by P. van Kluijven, Rotterdam, The Netherlands.

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:

- 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 Tecnico Nautico di Triste (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 Díaz (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 Aland 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 Baluchitan (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-IAMU 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/](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' 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, Alegría, 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.

References


[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:

To study the feasibility of a single working language that could be used in all circumstances.

To carry out a linguistic analysis of ship-to-ship and ship-to-shore communications.

To design a language guide to be used in emergency situations and for accident prevention.

To analyse the impact and causes of intercultural tension on board.

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.

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